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ADHERENCE PRACTICES OF CAUCASIAN WOMEN WITH HYPERTENSION  
RESIDING IN RURAL FLORIDA: AN EXPLORATORY STUDY

by

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A dissertation submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy  
in the College of Nursing  
at the University of Central Florida  
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## ABSTRACT

Hypertension, or high blood pressure, is a major risk factor for heart disease and stroke. Elevated blood pressure is often a silent process affecting multiple organ systems. Risk for heart disease is associated with poorly treated or unrecognized hypertension that is more common among women than men. Non-adherence to prescribed treatment regimens has been identified as a major reason for inadequate hypertension management. This exploratory descriptive qualitative study using narrative inquiry investigated adherence practices among Caucasian women with diagnoses of hypertension from a rural area of Florida. The purpose of this study was to gain an understanding from women who had been diagnosed with hypertension about the challenges of living with and managing this chronic condition in their daily lives. Participants included Caucasian women ( $n = 11$ ) recruited from a Federally Qualified Rural Health Center in Florida. Semi-structured interviews were used to collect data. Content analysis procedures were used to analyze the interviews.

Emergent themes included: work stress affecting health and leading to high blood pressure; silent “sneaky, gradual” onset of mild to moderate symptoms leading to high blood pressure; and strong influence of family members with high blood pressure and related complications that instilled fear in participants to adhere to their prescribed treatment plan in some, or in others to non-adherence. Social support from friends and coworkers was a repeated theme supporting adherence. Minor themes associated with non-adherence included fear of potential side effects of medications, challenges of daily living caring for family, fatigue from high blood pressure and medications affecting daily work, poor food choices due to finances and availability of high sodium and fatty foods at work and home, stress and time demands affecting

ability to exercise to control high blood pressure, and focus on family forgetting self-needs. Limitations of the study included a small convenience sample with findings that may not be applicable to a population of hypertensive women from different rural settings. Future nursing studies in similar populations may contribute to improved adherence practices, leading to reduced complications from poorly controlled hypertension.

This dissertation is dedicated to my wonderful husband, Bill, for all his unending love, support, patience, encouragement, and great sense of humor. Without all his daily household and family assistance, in addition to companionship in my travels to school and research programs, I would not have been able to complete this study.

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Always watching over me in love, I dedicate this dissertation to my Lord and Savior, Jesus Christ, who makes all things possible for those who believe in Him.

“I can do all things through Christ who strengthens me.” Philippians 4:13, KJV.

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## CHAPTER 1: INTRODUCTION

This chapter focuses on the background of the phenomenon of interest for this study, that is, adherence behaviors among Caucasian women with a diagnosis of hypertension who reside in a rural area of Florida. Highlighted herein are the rationale, purpose, problem statements, and nursing significance of this study.

### Background

Hypertension (HTN) affects over 50 million individuals in the United States and approximately one million individuals worldwide. Hypertension is the single greatest risk factor for stroke (*Heart Disease and Stroke Statistics*, American Heart Association, 2008). The prevalence of hypertension will worsen unless broad, effective, preventive measures are initiated. Data from the recent Framingham Heart Study indicate that individuals with normal blood pressure (i.e., less than or equal to 120/75 mm Hg) at age 55 have a 90 percent lifetime risk for developing hypertension (Vasan et al., 2002; American Heart Association Statistical Update, 2009). The World Health Organization (WHO) estimates that hypertension, or high blood pressure, affects one in three adults in the United States and contributes to one out of every eight deaths worldwide, ranking hypertension as the third-leading cause of death (Kottke, Stroebel, & Hoffman, 2003; *The World Health Report*, 2002).

Hypertension is associated with stroke, heart disease, blindness, and end-stage renal disease. It usually has no symptoms and may be present for years without individual awareness. During these silent early stages, however, damage to the heart, blood vessels, and kidneys can occur (National Heart, Lung and Blood Institute Diseases and

Conditions Index, November 2008, What is High Blood Pressure?). Cardiovascular disease (CVD), consisting of heart disease and stroke and a consequence of hypertension, remains the leading cause of death for men and women in all racial and ethnic groups in Florida and the U.S. (*Heart Disease and Stroke*, 2010, 2000), and in 2005, accounted for 35% of all deaths in Florida (*Cardiovascular Disease Summary*, Florida Department of Health, 2007).

Heart disease and stroke are costly and widespread, together accounting for more than \$500 billion in health care costs and related expenses in 2010 alone (Lloyd-Jones et al., 2010). The death rate from hypertension increased 19.5 percent between 1996 and 2006. Men with hypertension have life expectancy reduction of 5.1 years; while hypertensive women have life expectancy reduction of 4.9 years (Lloyd-Jones et al., 2010). Mortality rates associated with strokes are higher in the southeastern states compared to other regions of the United States. Age-adjusted rural death rate for heart disease in Florida from 2006-2008, 174.3 per 1000 people, exceeded the age-adjusted urban death rate for heart disease in Florida, 161.3 per 1000 people, during the same time period. Additionally, the age-adjusted rural death rate for stroke in Florida, 35.8, was higher than the age-adjusted urban death rate for stroke in Florida of 32.8 from 2006-2008. This implies a higher death rate from heart disease and stroke in rural Florida compared to urban areas of Florida (Florida Rural and Urban Age Adjusted Death Rate, 2006-2008).

Cardiovascular disease associated with hypertensive heart disease is the number one cause of death in women over age 50 (American Heart Association, 2011; Taylor,

Hughes, & Garrison, 2002; Ali, 2002). Although significant progress has been made in hypertension control and reducing associated CVD in the past 30 years, heart disease remains the number one cause of death in Caucasian women and women of color (American Heart Association, 2008). Risk for heart disease is associated with poorly treated or unrecognized hypertension, which increases in age, and is noted more in women than men (Ali, 2002). In particular, the percentage of women in Florida who reported being told by a doctor they have high blood pressure in 2009 was 29.4%, higher than the national average of 28.3% of American women told they have high blood pressure (Kaiser Family State Health Facts, 2009).

Non-adherence to prescribed treatment regimens has been identified as a major reason for inadequate control of hypertension in all races. In particular, medication non-adherence costs overall are as high as \$100 billion annually from increased provider visits, hospitalizations, laboratory tests, drugs prescribed, adverse drug effects, recurrent illnesses, and premature deaths (Schlenk, Dunbar-Jacob, & Engberg, 2004). In spite of available effective medical therapy, only 53.1% of persons on antihypertensive medications have controlled blood pressure (Krousel-Wood, Hyre, Muntner, & Morisky, 2005; Vermeire, Hearnshaw, Van Royen, & Denekens, 2001). More recently, over 64% of adults taking antihypertensive medication achieved blood pressure controlled less than 140/90 mm Hg (Ostchega, Yoon, Hughes, & Louis, 2008).

Non-adherence can include a variety of behaviors in women, including intentional non-adherence, where one may disregard professional advice related to social or cultural reasons, or unintentional non-adherence, associated with access to medications, daily



routines, and forgetfulness. Client-provider factors have been recognized by researchers as an important aspect of medication adherence (Lehane & McCarthy, 2007). Multiple roles, personal and professional responsibilities, lack of access to the resources to purchase the medications, and potential untoward side effects, may be associated with non-adherence to medical therapy in some women.

Women who may be unaware of their elevated blood pressure often seek care in emergency departments and physicians' offices complaining of vague symptoms such as headaches, dizziness, increased fatigue, nausea, and chest discomfort. Some complain of indigestion, which may not be readily recognized by the health professional as a serious health threat from poorly treated or unrecognized hypertensive heart disease. Because complaints are vague and often subtle, women may initially disregard or minimize their symptoms. Often, when first diagnosed with hypertension, a woman may ignore her healthcare provider's advice because she does not consider her condition serious. Or after taking medication for a few weeks, the symptoms may have subsided; hence, she does not adhere to the prescribed treatment plan (Dunbar-Jacob, Bohachick, Mortimer, Sereika, & Foley, 2003; Dunbar-Jacob, Dwyer, & Dunning, 1991; Taylor, Hughes, & Garrison, 2002; Ali, 2002).

*Hypertension* is defined as systolic blood pressure of 140 mm Hg or higher, diastolic blood pressure of 90 mm Hg or higher; or, taking antihypertensive medication and being told twice by a health professional that the individual has high blood pressure (Lloyd-Jones et al., 2009; National Health and Nutrition Examination Survey, *NHANES*, 1999-2004, 2004-2006). Women have an increased risk of heart attack or stroke equal to

or greater than that of men of equal age (National Institute of Health, National Heart, Lung, and Blood Institute, NIH/NHLBI, *High Blood Pressure, JNC-7 Express*, 2003; Chobanian et al., 2003). Postmenopausal women over age 50, in particular, are 10 times more likely to die of Coronary Heart Disease (CHD), heart attacks, or strokes, often related to untreated or under-treated hypertension, than from breast cancer (Wenger, 1999; Wenger, 2006). Women with hypertension may not understand that their condition is chronic and requires close monitoring and often daily medication to regulate the blood pressure.

An increased prevalence of heart disease associated with untreated or under-treated hypertension has been noted among women, in particular those residing in rural areas of the United States (Taylor, Hughes, & Garrison, 2002; Fahs & Kahlman, 2008). Rural residents in many areas have impaired access to healthcare; hence, they seek professional care later, and after the condition resulted in more serious consequences. A variety of factors contribute to this rural disparity, including no access or greater distances to health care services, impaired travel, poverty, being uninsured or underinsured, social and geographic isolation, cultural preferences, and limited health literacy (Weinert & Hill, 2005; Appel, Gigar, & Davidhizar, 2005).

Hypertension is more prevalent in the southeastern United States (American Heart Association, *Heart Disease and Stroke Statistics*, 2010, 2008). Factors associated with this disparity include high rates of obesity, diabetes, limited physical activity, and dietary preferences, including excessive intake of sodium and saturated fats. Obesity, in particular, is highly prevalent in southeastern areas of the U.S., with between 24% and

28% of the population diagnosed as obese (Well Florida Council, 2008; Dallas-Hall et al., 1997).

An important aspect of managing hypertension is adherence with the prescribed treatment regimen. Approximately half of clients with chronic disease, including hypertension, have problems maintaining their treatment plan to where they are unable to obtain any clinical benefit (Dunbar-Jacob et al., 2000). Typical adherence rates are about 50% for medications and much lower for lifestyle prescriptions and other behaviorally demanding regimens (Haynes, McDonald, & Garg, 2002). At some point in time, it is estimated that about 80% of clients are non-adherent with their health care provider's recommended treatment regimen (Dunbar-Jacob et al., 1995). Poor adherence is identified as a major public health concern, creating a severe financial burden on the healthcare system and is estimated to exceed \$100 billion annually in the United States (Vermeire, Hearnshaw, Van Royen, & Denekens, 2001). Between one-third and two-thirds of all medication-related hospital admissions are attributed to non-adherence (Munger, Van Tassell, & LaFleur, 2007). The direct and indirect cost of hypertension for 2009 was estimated at \$73.4 billion (Lloyd-Jones et al., 2009).

To effectively manage hypertension, healthcare professionals must understand what motivates the client to adhere to the prescribed medications and make lifestyle changes to accommodate the condition. Motivation improves when clients have positive experiences with and trust their health care professionals. The interaction between clients and their health care provider is the most important interaction in ensuring adequate medication adherence (Harmon, Lefante, & Krousel-Wood, 2006). Clients' beliefs and

attitudes about their high blood pressure, along with their experiences with providers regarding management of their hypertension, may affect adherence to treatment recommendations (Kressin et al., 2007). Likewise, an individual's attitude is greatly influenced by his or her cultural values, beliefs, experiences with the health care system, and cultural connectiveness with his or her healthcare provider. A woman's frame of reference must be understood by the clinician as a prelude to building trust and effectively communicating with a client and her family (JNC-7, National Institute of Health, National Heart, Lung, and Blood Institute, NIH/NHLBI, High Blood Pressure, JNC-7 Express, 2003).

#### Purpose and Problem Statements

This exploratory, descriptive, qualitative study investigated adherence practices among Caucasian women with diagnoses of hypertension who reside in a rural area of Central Florida. The purpose of this study was to gain an understanding from women who have been diagnosed with hypertension about the challenges of living with and managing this chronic condition in their daily lives.

The problem statements include:

1. What is the understanding and self-described impact/implication of hypertension for Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?
2. What is the meaning of treatment *adherence* for Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?

3. What are the self-described adherence practices of Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?
4. What are the self-described deterrents to the recommended hypertension regimen for Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?

### Rationale and Significance

Adherence behaviors connote the degree to which an individual follows his or her prescribed treatment plan. Overall, there is a scarcity of nursing research in rural populations, which makes it difficult to synthesize specific topics for rural groups. In particular, there is a paucity of research on adherence practices of rural women with chronic illness, specifically those having a diagnosis of hypertension. An exploratory, descriptive study of adherence practices in women with hypertension living in rural Florida can offer insights about the lives of those who live with and try to manage their chronic health condition. In turn, the findings could lead to developing tailored interventions that fit the preferences of rural women with hypertension. Ultimately, such strategies have the potential to improve health outcomes by decreasing the complications from poor adherence to medical and treatment therapy in rural women with hypertension. Research studies on this topic have the potential to address a health disparity and improve the health outcome of women in a more remote and underserved region of the United States.

### Assumptions

Two assumptions in proceeding with this study were that participants would respond honestly; and, have some understanding about their diagnosis of hypertension.

### Evolution of the Study

#### Anecdotal Evidence to Guide Study

The principal investigator (P.I.) of the study was an advanced practice nurse who worked with women with a diagnosis of hypertension in multiple inpatient and outpatient settings in Southwest and North Central Florida. Over the years, this researcher noted the reasons cited by the women for not adhering to their prescribed treatment regimen. Most often cited for not taking medications is the client forgot to do so, associated with multiple responsibilities or because she “felt better,” thus she did not feel she needed to continue with the medication. Another often cited deterrent to adherence was cost; the woman could not afford to purchase the prescribed medications to manage her hypertension. A few reported their decision not to take the prescribed medication and/or adhere to recommended lifestyle changes (for example, exercise, dietary modifications) was based on extended family member(s) disagreeing with the appropriateness or need for that intervention; hence, the woman modified her treatment regimen based on those comments.

Over time, this researcher developed a particular interest in adherence behaviors of women with hypertension. Why did some of these women ignore their symptoms and not take their medications? Why did other women with as many or more roles and life stressors adhere to the prescribed treatment plan to manage their hypertension? What

contextual factors influenced adherence and non-adherence in these women with hypertension? Subsequently, these clinical questions led to the desire to explore the phenomena of adherence behaviors in women with hypertension who live in a rural area of Florida.

#### Importance of the Study: Rural Health Disparities

For the purposes of this dissertation, *rural* is defined as *an area with a population density of less than 100 individuals per square mile* (Florida Office of Rural Health, 381-0406 F.S.- Florida Statutes- Florida Rural Health Association, 2007; Florida Department of Health: Office of Rural Health, 2004). Rural America consists of over 20 percent of the United States population, and rural communities are ethnically, culturally, and economically diverse. In general, the smaller, poorer, and more isolated a rural community is, the more difficult it is for residents to access high-quality, affordable, health care services (Executive Summary, *Quality Through Collaboration: The Future of Rural Health Care*, Institute of Medicine Report on Rural Health Care, 2004).

Gorski (2011) notes 70 million people, close to one in four Americans, live in rural areas. These individuals on average are older, poorer, more likely to be uninsured, and have higher rates of chronic health problems than urban counterparts. In rural areas, healthcare services are often distant with a shortage of healthcare providers, particularly in primary care. Although Florida is the fourth most populated state in the U.S., it has substantial areas that are designated as rural. (Florida Department of Health: Office of Rural Health, 2004). Florida population in 2010 was 18,801,310 people, including 1,207,042 people living in 33 rural Florida counties. According to the U.S. Census 2010,

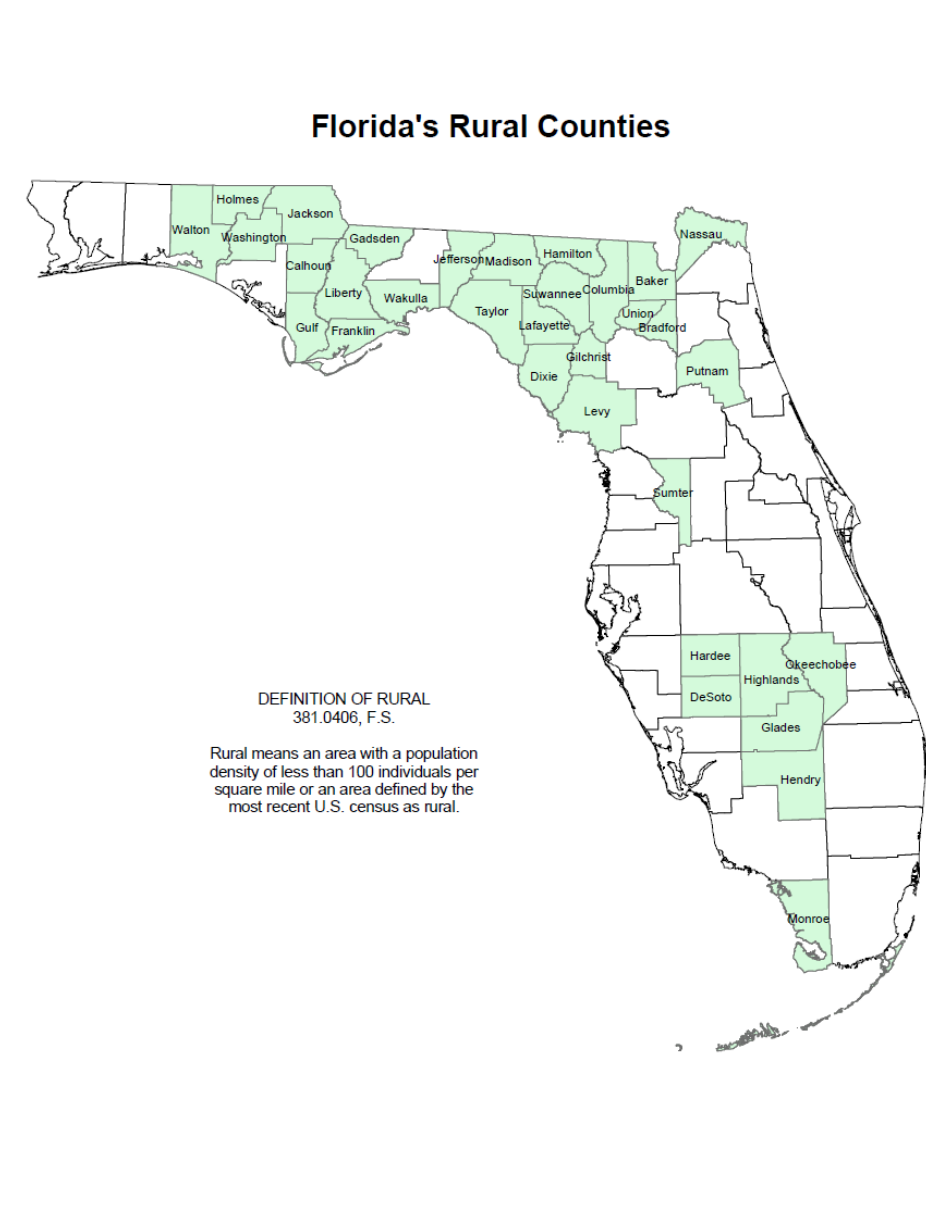
an additional 2.1 million persons were estimated to live in the rural portions of Florida's 34 urban counties. (Rural Health and Rural Human Services Resources for Florida, 2011). Additionally, Florida is the ninth largest producer of farm commodities in the nation, with 30% of its total land area in farmland. Thus, many of the rural Florida residents are also involved in farming.

As of the 2010 Census, 33 of Florida's 67 counties are considered *rural* based on the statutory definition (381-0406 F.S.- Florida Statutes- Florida Rural Health Association, 2010 and 2007; Office of Rural Health, 2004). In geographical area, Florida's 33 counties designated as rural include 42% of the state, or nearly 54,000 square miles of land mass. Florida's rural counties are located primarily in the Panhandle, central region, and the Florida Keys. Of note, more than 10% of the state's rural areas are designated for recreation and preservation, including federal and state parks, forests, wilderness areas, wildlife preserves, and national seashores. A number of Florida counties that are designated as urban include areas classified as rural within the county (Florida Department of Health, Rural Health Overview, 2004).

Of Florida's 16 million citizens, about 1.8 million (11% of the total population) reside in rural regions of the state. Additionally, a disproportionate number of elderly make up Florida's rural population. Major issues for rural populations in Florida are similar to those in rural areas across the United States, including: poor housing conditions; lack of modern amenities; poor quality education; lower employment rates; persistent poverty; population loss due to migration to urban areas; limited access to resources and supplies; insufficient policing, fire rescue, and healthcare services; and



reduced access to information and technology (Florida Office of Rural Health, 2007; Florida Rural Health Association).



Legend: Green color = rural Florida counties; White color = all other Florida counties

Figure 1. Florida's Rural Counties. Florida Rural Definition Maps- sponsored by USDA

Economic Research Service 2010. Retrieved August 10, 2011 from

[http://www.doh.state.fl.us/workforce/RuralHealth/PDFs/Rural\\_Counties\\_Map.pdf](http://www.doh.state.fl.us/workforce/RuralHealth/PDFs/Rural_Counties_Map.pdf)

### Sumter County

The setting for this study was Sumter County, selected as a rural county in close proximity to the researcher with access to a Federally Qualified Rural Health Center to conduct the study. (See Figure 1). This Florida County was created in 1853, named for General Thomas Sumter, a hero of the American Revolutionary War. In the past, the county was nicknamed “Hog County,” based on its reputation as being a haven for moon shiners, crooks, and outlaws in the 1800s. Sumter County is a predominantly rural agricultural community located about 30 miles south of Ocala and 60 miles north of Tampa. The county is approximately 574 square miles in size, including 19 square miles of water, and bordered by Marion, Citrus, Hernando, Pasco, Polk, and Lake Counties. In spite of the growth of this rural county, the U.S. Census Bureau 2000 statistics indicate the population was 53,345, which represents an increase of 68.9% since 1990 (Sumter County statistics, cited 2008, October 8). In 2007, Sumter County increased to an estimated population of 89,771, according to the Bureau of Economic and Business Research (Sumter County overview, cited 2009, November 10). Population increased to 93,420 in 2010, a 75.1% change from 2000 to 2010. Percent of female persons in 2010 were 48.0%. Percentage of White persons in 2010 was 86.6%, including White persons not Hispanic 82.8%, relevant to this study (Sumter County Quick Facts from the U.S. Census Bureau, cited 2011, November 8).

Federal designations for Sumter County include primary health professional shortage area, dental health professional shortage area, mental health professional shortage area, and a medically underserved area/population (Well Florida Council

statistics, 2008). In recent years, Sumter County has increased in population due to the expansion of a large retirement complex called The Villages. This development has brought in more income to the previously poor county and changed the demographics of the area; however, the county still remains rural (Sumter County Overview, 2008).

### Setting

Thomas E. Langley Medical Center, a rural Federally Qualified Health Center in Sumter County, was the setting for this study. This rural health center serves between 12,000 and 13,500 residents yearly [who have various chronic and acute illnesses] from Sumter and surrounding counties of Marion, Lake, Hernando, and Citrus. Client services include medical specialties of Urgent Care, Adult Medicine, Geriatrics, Behavioral Health, Podiatry, and Pediatrics and support services of pharmacy, laboratory, imaging, and dental care. A rural health clinic accepts most health insurance plans, as well as Medicaid, Medicare, and sliding scale cash payments based on household income. The clinic offers primary healthcare regardless of ability to pay, a needed service for limited income clients (Langley Medical Center clinic services information, cited 2009 November 10). More specific information on the demographics of the population served will be discussed in Chapter 3 of this document (*Project Health* report, February 21, 2009. Cited 2009, November 19 with permission from A. Lazarius, Comptroller, Thomas E. Langley Medical Center, Sumterville, FL).

### Florida's Rural Health Plan

The Florida Office of Rural Health developed the *Florida Rural Health Plan* (Rural Health Issues in Florida, 2008) to initiate policy in order to address relevant

health-related concerns for populations who reside in these regions of the state. The *Florida Rural Health Plan* identifies disproportionately high mortality rates for select chronic diseases within particular population groups; large numbers of uninsured and/or underinsured individuals and families; insufficient numbers of health professionals of all types; and inadequate emergency medical services associated with financial factors that hinder developing services, coupled with recruiting and retaining adequately prepared health professionals. Many rural Florida communities lack dental, mental, and vision health services. Further, small rural hospitals lack the resources to purchase state-of-the-art technology and must contend with aging physical facilities. The situation is further complicated by the fact that rural hospitals and health care professionals receive lower Medicare reimbursement rates than urban counterparts (*Rural Health Issues in Florida*, 2008).

#### Federally Qualified Health Centers

One strategy to address the rural inadequacies and restricted access to services are Federally Qualified Health Centers (FQHCs). The FQHC benefit under Medicare was added effective October 1, 1991 to Section 1861 (aa) of the Social Security Act (the Act) amended by Section 4161 of the Omnibus Budget Reconciliation Act of 1990. Federally Qualified Health Centers are ‘safety net’ providers, such as community health centers, public housing centers, outpatient health programs funded by the Indian Health Services, in addition to programs for migrants and the homeless. The purpose of the FQHCs is to enhance the provision of primary care services in underserved and rural communities

(*Federally Qualified Health Center Fact Sheet*, Medicare Learning Network, February 2006/Revised March 2011).

A FQHC is designated as an urban or rural entity based on definitions in Section 1886(d)(2)(D) of the Act. If a FQHC is not located within a Metropolitan Statistical Area (or a Core Based Statistical Area as it now known), it is considered a Federally Qualified Rural Health Center (FQRHC); subsequently, cost-based reimbursement is provided for care rendered by providers in the FQRHC (*Federally Qualified Health Center Fact Sheet* Medicare Learning Network cited 2011, August 10).

Specifically, FQRHCs provide much-needed health care services to rural residents with physician services along with mid-level primary care providers' services, including nurse practitioner (NP), physician assistant (PA), and certified nurse midwife (CNM). Visiting nurse services are provided to the homebound in an area where the Center for Medicare and Medicaid services has determined that there is a shortage of Home Health Agencies. Chronic disease management is also included in the health services provided by the FQRHCs (*Federally Qualified Health Center Fact Sheet*-Medicare Learning Network, February 2006/ Revised March 2011).

### Summary

Hypertension is a known precursor to cardiovascular disease, with both conditions increasing significantly in the United States. This chapter highlighted background information on hypertension among rural women along with information about the population of interest for this study. Subsequent chapters will provide an in depth review

of the literature (Chapter 2), a discussion of the study's methodology (Chapter 3), study findings (Chapter 4); and, concludes with the findings and implications (Chapter 5).

## CHAPTER 2: REVIEW OF RELEVANT LITERATURE

This chapter includes a summary of the literature focusing on the phenomenon of interest, population, and setting for this qualitative study; specifically, the adherence behaviors among women having a diagnosis of hypertension, who live in rural Florida County.

### Disparity of Hypertension

Hypertension has been strongly linked with cardiovascular disease, heart disease, and stroke, which is the second highest ranked priority focus area for *Rural Healthy People 2010* (Gamm & Hutchison, 2004). Cardiovascular disease remains the leading cause of death in women according to the American Heart Association (2010). According to the World Health Organization (WHO), suboptimal blood pressure control (greater than 120 mm Hg systolic blood pressure) accounts for more than 62% of cardiovascular disease (Chobanian et al., 2003). Mortality from heart disease and stroke doubles with every 20 mm Hg systolic or 10 mm Hg diastolic increase in blood pressure (Vasan et al., 2002; National Heart, Lung, and Blood Institute, Diseases and Conditions Index, What is High Blood Pressure?, April 1, 2011).

National Health and Nutrition Examination Surveys (NHANES), 1976-2000, 2000-2004, found that of an estimated 41.9 million people with hypertension, 31% (about 13.1 million) were unaware of their hypertension; 17% (7 million) were aware of their condition but were not being treated; 29% (12 million) were being treated, but their hypertension remained uncontrolled; and only 23% (9.7 million) had their blood pressure



well controlled with medication (Qureshi, Suri, Kirmani, & Divani, 2005). Of the 21.7 million persons treated with medication, only 45% (9 million) had their blood pressure optimally controlled on medical therapy.

Individuals aged 65 and older make up only 19% of those with hypertension, but they constituted 45% of the people who were unaware of their high blood pressure (Hyman & Pavlik, 2001; Qureshi et al., 2005). Figure 2 identifies the extent of awareness, treatment, and control of high blood pressure by race/ethnicity and sex, in which Non-Hispanic (NH) Caucasian females make up 73.4% of the U.S. population with hypertension, with only 64 % of those females treated and only 34.5 % of those females with controlled hypertension (Hyman & Pavlik, 2001; Qureshi et al., 2005; American Heart Association, 2009; NHANES: 1999-2004, 2008; Lloyd-Jones et al., 2009). (See Figure 2). Figure 3 summarizes age-related information relative to hypertension awareness, treatment, and control (See Figure 3).

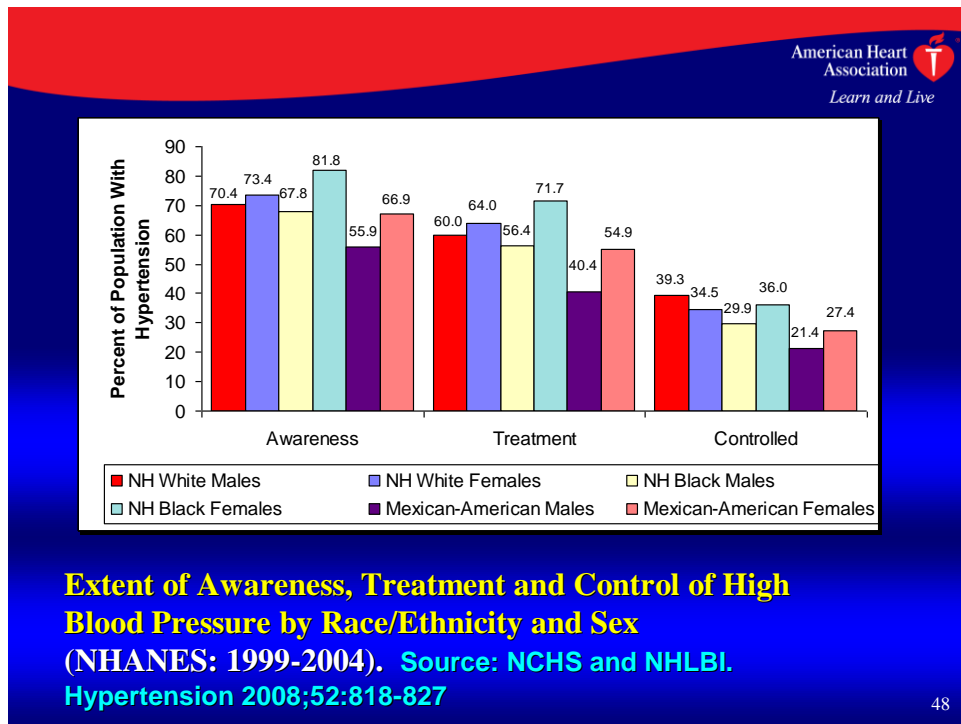


Figure 2. Awareness, Treatment, and Control of High Blood Pressure by Race/Ethnicity and Sex. American Heart Association (2009), *Heart Disease and Stroke Statistics* (with permission from American Heart Association).

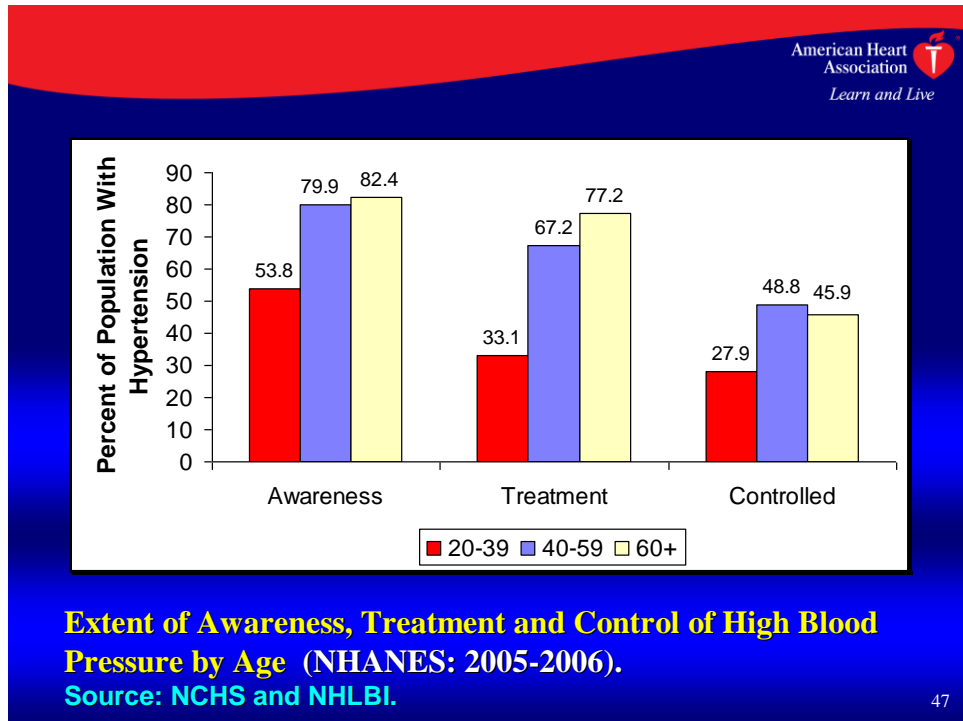


Figure 3. Awareness, Treatment, and Control of High Blood Pressure by Age. American Heart Association (2009), *Heart Disease and Stroke Statistics* (with permission from American Heart Association).

Non-adherence to antihypertensive therapy remains a significant public health problem contributing to adverse cardiovascular events. In spite of the availability of effective medical therapy for hypertension, only 31% of persons with hypertension have controlled blood pressure (Krousel-Wood, Thomas, Munter, & Morisky, 2004). Women with hypertension may be unwitting non-adherents to recommended therapy, taking lower dosages or less frequent dosages, or taking their antihypertensive therapy only when 'symptomatic' due to cultural and socioeconomic reasons; yet, believing they are adherent to their prescribed care plan (Krousel-Wood, Thomas, Munter, & Morisky, 2005).

Women often delay health care until after their disease of hypertension has progressed, usually silently with minimal symptoms. At that time, the women may be experiencing internal organ sequella and systemic effects associated with severe and uncontrolled hypertension. Once diagnosed, almost half of those with hypertension who are prescribed medications do not comply adequately with their treatment. Subsequently, they are prescribed additional medication by their health care provider, who may be unaware that the individual was not adhering to the initial plan of care (Wang et al., 2004).

#### Adherence versus Compliance

The terms *compliance* and *adherence* often are often used synonymously in the literature and in daily conversations, but the two terms connote different meanings. Historically, *compliance* has been used in reference to a client closely following a physician's prescribed orders for pharmaceuticals, treatments, and lifestyle behaviors

related to diet, exercise, weight loss/gain, alcohol, and nicotine use. The term *compliance* connotes strict ‘obedience’ or ‘disobedience’ to the physician’s orders (Sackett & Haynes, 1976).

The term *adherence* has come into more recent use and infers the existence of a client-provider partnership. The term takes into consideration the client’s contextual realities, which could be a factor in abiding or not abiding by the clinician’s recommended treatment options to manage a particular health condition. Adherence infers that the client assumes greater responsibility for his or her health (Burke, Tschirpke, & Polakoski, 2005; Sabate, 2003). In this study, the term *adherence* will be used in reference to participation by the client in the treatment plan recommended by the clinician to manage her hypertension.

#### Adherence and Hypertension Management

Chobanian et al. (2003) note that the most effective therapy prescribed by the most careful clinician will control hypertension only if clients are motivated. “Motivation improves when clients have positive experiences with and trust in the clinician. Empathy builds trust and is a potent motivator” (p. 2560). Adherence rates to prescribed medical regimens are typically only about 50% for medications. Adherence to instructions to lose weight or stop smoking is substantially lower, with long-term success rates typically less than 10% (Haynes, McDonald, & Garg, 2002). Simple measures, such as directly asking clients about medication-taking habits, keeping appointments, and watching for appointment ‘no-show’ patterns and treatment non-response have been shown to increase

awareness of adherence and detect problems (Fongwa et al., 2008; Stephenson et al., 1993).

Providing clear written instructions for prescribed medications and behavioral changes by the clinician improves adherence for a short time period by a client. Whereas, improving adherence to long-term regimens (more than two weeks) requires ongoing counseling by the provider about medications and treatment orders, the importance of adherence, and how to organize medication taking. Also shown to be helpful in promoting client adherence are offering reminders about appointments, rewarding a client for following the regimen, and enlisting social support from family and friends (Haynes, McDonald, & Garg, 2002).

Morisky (2008) identified medication assessment techniques and noted that approximately 50% to 60% of clients achieve near-optimal or excellent adherence. This finding compared similarly to client self-reports. Past client behavior in medication-taking and following recommended treatment is seen as a reliable indicator of future adherence (Morisky, 2008).

#### Morisky Clinical Adherence Tool

Morisky, Green, and Levine (1986) developed a simple, self-reported medication-taking assessment tool to measure client adherence consisting of the following four questions: “Do you ever forget to take your medication?”; “Are you careless at times about taking your medicine?”; “When you feel better, do you sometimes stop taking your medication?”; and, “Sometimes if you feel worse when you take the medicine, do you stop taking it?” The tool specifically addresses medication-taking adherence in clients

with a diagnosis of hypertension. Scoring involved a four-point Likert scale ranging from high to low. Individuals who score high on this assessment (those with more ‘no’ responses to the questions) were significantly more likely to have their blood pressure under control compared to individuals who scored lower (those with more ‘yes’ responses).

In a study of 88 hypertensive clients, the Morisky tool was found to have a sensitivity of 72% with a specificity of 74% for adherence to at least 80% of prescribed medications (Morisky, Green, & Levine, 1986). In psychometric evaluation of the tool, data on patient adherence to the medical regimen was collected at the end of a formal 18-month educational program. Blood pressure measurements were recorded over a three-year follow-up period. The scale demonstrated both concurrent and predictive validity in regard to blood pressure control at two years and five years. Seventy-five percent of the patients who scored high on the four-item scale at year two had their blood pressure under adequate control at year five, compared with 47% under control at year five for clients scoring low ( $p < 0.01$ ). Cronbach alpha reliability was 0.61. Sensitivity of the tool was 0.81 and specificity = 0.44 (Morisky, Green, & Levine, 1986). This four-item tool allows the clinician to quickly assess various determinants of medication-taking behavior. Opportunities are also provided for the clinician to provide behavioral reinforcement, such as enlisting social support from provider staff or family members or utilizing interpreters as needed to offer information (Morisky, 2008; Morisky, Green, & Levine, 1986).

### Adherence/Non-Adherence Research: What is Known

Non-adherence to medication regimes has received considerable attention over the past 20 years with over 700 studies conducted, using over 200 variables to assess the determinants of adherence behaviors (Morisky, Green, & Levine, 1986). The major categories investigated include disease factors, patient characteristics, referral and appointment process, therapeutic regimen, and patient-provider interaction. Disease factors and patient characteristics have not been shown to have significant associations with adherence behaviors. Variables that displayed higher levels of association with adherence include patient-provider interaction, psychosocial and sociologic aspects of the client, and various types of environmental support given to the client (Morisky, Green, & Levine, 1986).

DiMatteo, Lepper, and Croghan (2000) conducted a meta-analysis with findings revealing that depression is a predictor of non-adherence to medical recommendations with odds three times greater that depressed clients will be non-adherent compared to non-depressed clients. The researchers conducted a quantitative review and synthesis of studies correlating clients' medical treatment noncompliance with their depression and anxiety, examining research on client adherence from January 1, 1968 to March 31, 1998. Conclusions included the significance of untreated or under-treated depression contributing to noncompliance to the medical regimen.

Morisky (2008) identified the five most common types of non-adherence with medication: 1) failing to have a prescription filled; 2) taking an incomplete dose; 3) taking the medication at the wrong time; 4) forgetting to take one or more medications;



and 5) stopping the medication because of symptoms and side effects. Strategies to encourage adherence by clients must address multiple factors, including knowledge of the importance of the regimen, belief in benefits of the treatment, and individual attitudes toward medication-taking. Environmental and social factors, such as the interpersonal relationship between the provider and the client, along with social support from family and friends, can impact adherence behaviors. Factors shown to improve client adherence include perceived support from the provider, client satisfaction with the medical visit, and the support of family members in the home environment. Among adults over 55, 63.1% have at least two to three medical problems associated with decreased treatment adherence (Morisky, 2008; Morisky, Green, & Levine, 1986; Dunbar-Jacob et al., 2003; Dunbar-Jacob, Dwyer, & Dunning, 1991).

Fongwa et al. (2008) conducted a qualitative, descriptive study of African American women with hypertension living in Los Angeles to identify factors associated with adherence to hypertension treatment. Five focus group sessions were conducted and audio-taped with African American women 35 years and older who were under medical care for their hypertension in an inner-city, free clinic. Transcripts from the audiotapes were analyzed by the researchers to determine common themes. The findings revealed three categories, including beliefs about hypertension, facilitators of adherence to treatment, and barriers to adherence to treatment.

Adherence ‘self-care’ was identified by the participants as taking responsibility or ownership of managing their high blood pressure (HBP), which was associated with adherence to prescribed regimens. Facilitators of adherence to treatment included reasons

to follow provider's orders, positive/proactive changes, knowledge about HBP, adherence self-care, and social support. Barriers to adherence were seen by the investigators as some of the women's descriptors related to individual, provider, and environmental factors and depression. Barriers to following dietary recommendations stemmed from denial of having HBP, financial problems, and medication side effects. Some of the women 'felt' well and, therefore, substituted folk remedies such as boiled garlic, ginger, and lime, in place of taking their prescribed medications (Fongwa et al., 2008).

Conclusions of the study supported the need for appropriate client education on managing hypertension and medication side effects, early screening for depression, development of culturally sensitive hypertension educational material, and formation of support groups for promoting adherence to treatment among African American women with hypertension (Fongwa et al., 2008).

Kressin et al. (2007) conducted survey research in 2001 among 793 Caucasian and African American clients previously diagnosed with hypertension from three Department of Veterans Affairs (VA) Medical Centers to explore associations among clients' race, self-reported experience with clinicians, attitudes and beliefs about hypertension, and medication adherence. Researchers tracked client's primary care visits over a 14-month period and interviewed 793 participants in the final cohort. Researchers assessed the content of the provider-client interaction, focusing on hypertension and anti-hypertensive medication adherence, in addition to socio-demographic characteristics and health beliefs. Findings indicated African American clients' providers were significantly more active in counseling and advising their clients about hypertension care and

medication adherence than Caucasian clients' providers. African American clients indicated greater knowledge and increased awareness of the importance of controlling their blood pressure than Caucasian clients; however, there were no race differences on a summary of adherence measures.

Multivariate models of medication adherence revealed that race is not significant, but, being told to split one's pills, believing one's blood pressure (BP) continues to be high, and having one's provider discuss things to do to make BP medication easier to take were each significantly associated with worse adherence, whereas having more confidence in one's ability to take BP medications as prescribed was associated with better adherence (all  $p$ 's = or  $< .02$ ) (Kressin et al., 2007).

#### Cultural Beliefs and Hypertension

Heurtin-Roberts and Reisin (1992) investigated the relationship between cultural beliefs about hypertension to compliance with treatment among 60 Black hypertensive middle-aged women being treated at Charity Hospital in New Orleans. The researchers conducted a qualitative descriptive study followed by quantitative analysis using semi-structured interviews to elicit explanatory models of hypertension held by these women. Participants were followed for a two-month period to obtain data on compliance with antihypertensive treatment and blood pressure control. Two interviews by the same investigator were held with each participant to elicit his or her illness models, health beliefs, and attitudes toward adherence. Themes emerging from data analysis included two basic folk illness models defined below: 'high blood' and 'high-pertension' held by 53% of the participants.

The clients considered 'high blood' a 'blood disease' wherein excessively hot, thick, or rich blood increasingly 'rises in the body' with a predictable course. The clients thought that once the blood was 'up,' it may remain up for weeks, no matter whether they took their medication or not, as they believed heredity and diet were the main contributors to 'high blood.' Participants considered harmful foods such as pork, grease, salt, or 'seasoning' to worsen 'high blood.' Exacerbating factors in 'high blood' were 'wrong foods,' stress, and heat, which made the blood hotter and thicker. Worry or anger was not important in controlling 'high blood.' Most participants considered antihypertensive medical therapy and dietary control important to manage this condition, but weight loss was seen as less important.

Participants considered 'high-pertension' a 'disease of the nerves,' and more unpredictable and dangerous. This folk illness was seen as blood usually 'at rest' except for stressful times of extreme emotion when the blood would rapidly 'shoot up' to the head and then fall down quickly. Participants considered 'high-pertension' more serious than high blood and could result in sudden death, with the trait toward this illness as having an excitable temperament and predisposition to worrying. These illness models were significantly related to compliance to treatment at the  $p = .01$  and  $.001$  levels. Compliance was related to blood pressure control at the  $p = .05$  level. Conclusions of the study were that culturally influenced health beliefs are an important influence on compliance and blood pressure control. Therefore, improved understanding of individual health beliefs and concerns by physicians and other health care providers may improve management of their clients' illness (Heurtin-Roberts & Reisin, 1992.)

### Adherence Behaviors and Hypertension

Ali (2002) studied predictors of Coronary Heart Disease (CHD) adherence behaviors using a form of the Health Belief Model (HBM) among 178 hypertensive women. Predictor variables included perceptions of susceptibility to CHD, perceptions of the seriousness of CHD, general health motivation, social support, and knowledge of risk factors of CHD including importance of hypertension control. Study results from regression methodology revealed that susceptibility to CHD, seriousness of CHD, knowledge of risk factors of CHD, and general health motivation together explained 76% of the variance of CHD adherence behaviors to prescribed therapy.

In a qualitative, descriptive study, Wu et al. (2008) explored factors contributing to medication adherence and barriers affecting non-adherence in clients with chronic heart failure. A convenience sample of seven women and nine men with diagnosed chronic heart failure on stable medical therapy were selected to participate in in-depth interviews. Interviews were audio-taped, transcribed verbatim, and analyzed. The researchers used content analysis strategies to analyze the data to identify patterns or common themes emerging to identify factors contributing to medication adherence and barriers leading to non-adherence.

Results showed a desire to be healthy was the principle motivator in one's decision to adhere to prescribed medical therapy. The process of clients making connections between knowledge of their illness and symptoms with the effectiveness of their medications in decreasing their symptoms enhanced adherence. Strong relationships between client and healthcare provider and family connections enhanced treatment

adherence. Environmental cues helped participants with their daily medication use and improved adherence. Study conclusions included the importance of education to help clients understand their illness and symptoms and importance of their medications to improve their symptoms, which promoted adherence. A positive relationship with the client and his or her healthcare provider may result in improved adherence (Wu et al., 2008).

### Rural Women and Chronic Diseases

Fahs and Kalman (2008) conducted an extensive state of the science review of the literature from 2000 to 2007 focusing on cardiovascular disease (CVD) and risk factors of CVD in rural populations. Literature searches for their book chapter, *Matters of the Heart: Cardiovascular Disease and Rural Nursing* (Fahs & Kalman, 2008), were conducted at two State University of New York campuses with over 5,000 citations produced and 210 relevant articles found. Many nursing studies reviewed in the meta-analysis CVD risk section included prevalence and identification of high blood pressure or hypertension as one aspect of their studies. Research involving control and management of hypertension among rural populations is an area where more nursing research is needed (Fahs & Kalman, 2008).

With respect to women with a diagnosis of hypertension who live in rural areas, the literature is sparse. However, there are several studies that focus on rural women with a chronic disease in general. Predeger and Mumma (2004) conducted a narrative inquiry to explore connectedness in the lives of women living with chronic illness, specifically women living with multiple sclerosis and women with breast cancer. The women were

interviewed over a 13-year period to learn how they maintained a sense of connection with daily living, relating with others, gaining a stronger connection to their illness, and moving toward improved health. One theme that emerged from data analysis included the strength of relationships of these women to important persons in their lives. Evidence of connectedness in the women was seen in their close personal relationships with family, friends, and pets. The women's close personal relationships with others illustrated their connectedness. The improved social support helped the women in managing loss of decreased daily functioning from their illness.

#### Health Perceptions of Rural Residents

Lee and Winters (2006) confirmed Weinert and Long's (1987) earlier findings using ethnographic and quantitative survey research with rural Montana farm residents to identify their health beliefs and health-related trends. Initially, Weinert and Long's study consisted of data collected in the late 1970s by graduate nursing students at Montana State University to better understand health and health care from the perspective of rural clients. The study was conducted over a six-year period and included data from 25 locations in Montana. Each student worked in depth in one community over a period of one year gathering data from individuals in ranching or farming communities. Domain analysis of data occurred involving three to four faculty reviewing and categorizing the qualitative data. Through an iterative process, recurrent terms were identified and organized according to the four nursing domains, specifically, person, health, environment, and nursing. Through a group process, terms were ordered from more general to specific to refine a grounded theory for rural nursing.

Lee and Winters (2006) and Weinert and Long (1987) noted the ethnographic data revealed that Montana residents define health as the ability to work or be productive in one's role, and pain would be tolerated for extended periods so as not to interfere with work. Cosmetic, comfort, and life-prolonging aspects of health were not considered important. Weinert and Long also used quantitative data from a health perception scale, which provided valuable insight into the perception of health by rural people. In addition, mental health status was investigated with the Beck Inventory and the Trait Anxiety Scale with findings of less depression and anxiety among the rural sample than findings from urban settings previously reported. Mental health problems were rarely discussed by residents in the ethnographic study. The authors of the various scales used in the survey reported sound construct and content validity estimates and reliability coefficients ranging from .85 to .93 and an alpha of .88. The quantitative findings complemented and validated the qualitative findings (Weinert & Long, 1987).

In a more recent study, Weinert and Hill (2005) conducted quantitative research with a cohort intervention study among rural women with chronic illness living in sparsely populated areas in Montana. The research question in developing the study was [how] could computer technology be effectively utilized to provide support and health education to isolated chronically ill middle-aged rural women and, ultimately, enhance their ability to adjust to the limitations and demands of their chronic illnesses. This telecommunication intervention provided computer access along with instructions on Internet use to teach the women how to use the Internet to meet their support and informational needs (Weinert & Hill, 2005). Participants learned about their illness and



improved their health in daily living through communication with each other. The *Women to Women* (WTW) project was a technology-based program with study aim to assist rural women in daily living with their illness and to provide social support for these women in remote locations. The women were instructed to use the Internet to obtain accurate health information about their illness and gain social support from the other women in the study.

Results of the initial data analysis from 63 women (intervention group  $N = 29$ , control group  $N = 34$ ) indicated that women participating in the study reported greater computer skills, increased computer comfort, and substantial knowledge gained regarding specific aspects of Internet use than women in the control group (Weinert & Hill, 2005). The findings further suggested the intervention had an appreciable effect on computer skills within the sample in each group across the time period, indicating that women who participated in the intervention improved their ratings of computer skills compared with a slight decrease in the control group.

Overall aims of the WTW project emphasized testing the efficacy of a computer-based intervention on various psychosocial outcomes such as decreasing depression and isolation and improving social support. Conclusions of the study were that work is of major importance to rural people, and health care must fit into their work schedules. Health is defined as the ability to work (Weinert & Hill, 2005). Interestingly, some participants kept working in heavy physical jobs despite a known high blood pressure, feeling as though it was more important to be working. Work was of greater concern than their elevated blood pressure or prescription medication to manage the condition

(Weinert & Long, 1987; Weinert & Hill, 2005). However, questions arise as to whether the findings of these studies with participants from the intermountain area are transferable to Caucasian women in rural Florida who reside in a significantly different context and may hold different cultural belief systems.

### Nursing Approaches for Rural Populations

Individuals who reside in rural areas often delay seeking health care until they are gravely ill or incapacitated and unable to work (Long & Weinert, 2006). Recommended nursing approaches need to address two distinct approaches in working with a rural population: a non-judgmental intervention for those who have delayed or not followed treatment and a strong emphasis on preventive health teaching. An informed nurse who cares for clients from rural settings will be sensitive to a client's desire for self-reliance, which can enhance adherence and health-promotion behaviors (Lee & Winters, 2006).

Essential components of a comprehensive health care continuum often are lacking in more remote areas. In a rural community, existing formal components of the health care system must mesh with the informal helping system (Weinert & Long, 1987). Rural populations often resist seeking services from healthcare providers who are new arrivals in their community or those who hold different cultural and health beliefs. Rural clients generally seek services after a provider is accepted by the community and considered as trustworthy as family members. Furthermore, acceptance of a health care provider tends to increase adherence behaviors to treatment recommendations.

Lee and Winters (2004) conducted a study to validate concepts for an emerging theory for rural nursing (Long & Weinert, 2006) by exploring the health perceptions and

needs of rural adults employed in service industries and living in communities of less than 1,500 persons. The researchers conducted semi-structured interviews among 38 adults in 11 rural communities, inquiring about their health and how they responded to illness and injuries. Methodology of the study was qualitative naturalistic inquiry using field research techniques. Major themes emerged from their data: defining health; traveling long distance for healthcare; difficulty accessing resources; delaying preventive health care until symptomatic, and only then seeking urgent care; choosing daily health-promoting activities; and continuing to work in spite of health status. Distance was a major consideration in the daily lives of rural participants, exemplified by challenges in accessing prescription medications, health care specialists, and emergency care.

As in previous studies with rural populations, participants associated good health as being able to work without limitations. Participants delayed seeking medical care until symptoms prevented them from doing their daily work. Another emerging theme was the notion of an individual's choice: choice of residence, occupation, workplace, and healthcare providers. Participants chose to live in rural communities because of family ties. Some had moved to an urban area, but chose to return to their home town. Their choice of healthcare providers was dependent on availability of financial resources, knowledge of trusted known provider, time of day, weather conditions, and belief of the available quality of care (Lee & Winters, 2004).

#### Qualitative Research in Rural Women with Hypertension

In a qualitative study undertaken by a nurse researcher in Louisiana using narrative inquiry methods (Boutain, 2001), rural women participants shared their

concerns of daily living with hypertension. The purpose of the study was to explore how these rural women associated worry and stress with control of their high blood pressure. The study utilized critical social theories, African American studies, and critical discourse concepts as a framework for the study. Participants included a convenience sample ( $N = 30$ ) of African American women ( $n = 15$ ) and men ( $n = 15$ ) with high blood pressure. The study was conducted over four months in 1999 with a community-based sample interviewed twice. Data analysis depended upon field experience in the community and the assistance of community consultants. Discourse analysis was used following 60 interviews, including 191 passages about worry and 58 passages about stress. Data analysis revealed themes of stress, worries, and fears about their health affecting their ability to work. Participants distinguished between worry and stress in everyday life from that of family concerns related to their stress and worry. Stress was associated with multiple daily tasks and confronting prejudices in the workplace and community. Participants perceived worry and stress as important health-related concerns affecting their high blood pressure (Boutain, 2001).

Eyler and Vest (2002) conducted qualitative research with focus groups involving *story design*, a qualitative research method used interchangeably with narrative inquiry (Duffy, 2007) interviewing women living in rural (less than 100 persons per square mile) Missouri and Illinois ( $N = 33$ ). Emerging themes from the interviews were: the influence of social environment, guilt, and family responsibilities; social support; environmental barriers of limited health care access; and ability to exercise due to decreased safe areas to walk. Worksite health clinics and exercise facilities were discussed as potential

appealing interventions. While not being directly focused on adherence, these rural preferences could be factors that enhance or deter adherence behaviors.

#### Rural Nursing Research: Need for Hypertension Studies

Nursing research is limited regarding studies of rural women with hypertension and CVD risk. Fahs and Kalman (2008) reviewed research articles focusing on hypertension among rural women. Nursing studies reviewed in the CVD risk section included prevalence and identification of hypertension (HTN) or high BP as just one aspect of their studies. The researchers found that rural populations tended to have a lower incidence of hypertension in places where subsistence living was still a mainstay of the culture. Additionally, rural dwellers of higher socioeconomic status (SES) or with more industrialization had increasing levels of hypertension along with other cardiovascular risk factors. Furthermore, hypertensive clients had a higher intake of dietary sodium and decreased dietary calcium and potassium also linked with increased hypertension. Control and management of HTN among rural populations is an area where more nursing research and work is needed (Fahs & Kalman, 2008).

In respect to methodologies with rural samples, Shreffler (1999) conducted survey research among rural residents in western Montana. She adapted her conventional survey based on knowledge and respect for characteristics and qualities of rural communities and rural culture. The researcher studied residents' views on access to health care in seven *frontier* (less than six residents per square mile) communities using a descriptive survey design. Surveys were sent to a random sample of 100 households in each of the seven communities and a subset of survey respondents was interviewed by telephone. Of the

700 surveys sent, 469 were returned by the rural residents for a response rate of 67%. Of the respondents, 51.5% agreed to a telephone interview. The response rate was considered very respectable as the survey was conducted among rural farming communities during the height of summer ranching/farm work.

The purpose of the study was to discover the *emic* (insider) perspectives of rural residents on access to health care available from a new model of health care delivery located in their communities. The health care model had previously been evaluated and deemed a success by the U.S. Health Care Financing Administration (the *etic* perspective) although not verified successful by the rural residents (Shreffler, 1999b). The researcher concluded that there is no one rural culture, considering the diversity of rural areas, region to region and country to country. Shreffler (1999) summarized the importance of tailoring survey methods in respect to the existing environment and preferences of study participants in diverse rural settings.

Cudney, Craig, Nichols, and Weinert (2004) identified barriers to conducting research among rural populations with the challenge of recruiting an adequate sample size in four studies in the rural West. The researchers presented issues to consider in participant recruiting from rural populations. Issues of importance included the uniqueness of the rural culture and context associated with increased recruitment costs, the need for rural-sensitive recruitment materials considering health literacy and appropriate reading level, over-sampling in event of participant loss to moving, refusing to participate or death, and lack of rural infrastructure that complies with institutional review (Cudney et al., 2004). The researchers concluded that most health care

professionals in rural settings have not received training on human participant protection education for research teams. Therefore, health care professionals probably in many situations are not eligible to help the researcher in the recruitment process.

### Summary

Hypertension is a pervasive and growing chronic health problem in the United States and is a known precursor to even more complex cardiovascular diseases. Disparities in the incidence and prevalence of hypertension are noted among certain aggregates, especially among women who reside in rural regions. The literature confirms that adherence to prescribed treatment regimens is critical to managing hypertension and preventing even more serious disease processes. The literature review prepared for this chapter revealed an information deficit relative to adherence behaviors among rural women in general; and for rural Florida women with a diagnosis of hypertension in particular. This information deficit reinforces the importance of examining the phenomenon of interest for this study. Chapter 3 will focus on the methodology used in this qualitative study to learn more about adherence behaviors of rural women with a diagnosis of hypertension.

### CHAPTER 3: METHODOLOGY AND PROCEDURES

This exploratory descriptive qualitative study focused on adherence behaviors of Caucasian women with a diagnosis of hypertension, residing in a rural Florida county (Sumter County). Narrative inquiry and content analysis processes were used to collect and analyze the data. Discussed in this chapter as well, are the setting, participant inclusion criteria, protection of human subjects, data collection, and analysis procedures.

#### Narrative Inquiry

*Narrative inquiry* is systematic investigation using a first-person account or an individual's story relative to the phenomenon of interest (Van Manen, 1990; Riessman, 1993; Munhall, 2007). Narrative research consists of collecting and defining the accounts that people share to describe experiences and offer interpretation of both the actual text and the deeper meaning of the event to the individual's life (Overcash, 2003).

Narrative inquiry is the broad framework of the ontology and epistemology of telling, receiving, and interpreting the words or stories of participants related to a phenomenon of interest (Carr, 1986). Narrative inquiry functions at the core of human nature. Communication interfaces with personal and social identity, reflecting core beliefs, values, and cultural views of a person at a given time and place (Duffy, 2007). Riessman (1993) describes the purpose of narrative inquiry "to see how respondents in interviews impose order on the flow of experience to make sense of events and actions in their lives" (p. 2). The investigator examines the sequence of stories or ideas elicited in an interview, along with thematic and linguistic connections between them. Ultimately, knowledge is gained regarding how individuals tie together significant events and



important relationships in their lives. In a systematic data analysis, the researcher identifies narrative segments. These, in turn, are analyzed for word choices associated with common themes. Verbal comment threads generally expand and validate responses of other participants, ultimately referred to as 'saturation of data.' The emphasis of narrative inquiry is on language to identify how people explain what they do and their identity and culture. Language connects the interpersonal context of the connections between storyteller and listener, in this case the researcher (Riessman, 1993).

Moen (2006) discusses narrative inquiry research within the framework of socio-cultural theory. The challenge for the researcher is to examine and understand how human actions are related to the social context in which they occur. Human learning and development occur in socially and culturally shaped contexts. How people develop into who they become depends on what they have experienced in the social contexts in which they have participated. Narrative inquiry is the manner in which human beings organize their experiences within the greater context into their individual stories.

Narrative research focuses on stories or ideas that are told and depend on the individual's past and present experiences and the person to whom the story is told. Individuals assign meaning to their experiences through the words. It is the task of the researcher to determine the application and relevance of the individual meanings to a larger group (Moen, 2006). Individuals construct stories, in their own words, when they wish to understand certain life events and situations that require them to link their inner world of desire and motive to an external world of observable actions (Polit & Beck, 2004).

Duffy (2007) reveals that narrative inquiry is not a passive activity where the researcher collects frozen memoirs of life events from participants. Instead, the researcher is an active partner with the participant bringing his or her stories and words to life and contributing to the process of mutual exploration. The researcher assumes the role of change agent, encouraging people to critically look at how their own life story and identity are intimately connected to the wider beliefs of their culture and families.

Common research questions in narrative inquiry focus on the life story or life experiences of an individual or group, as told by individuals. Narrative inquiry has varied data sources including autobiography, biography, oral history, life history, auto-ethnography, narrative case studies, and other methods that require collection of the stories of people (Munhall, 2007). For this study, a personal interview with the participants was the source for the data. Participants' stories were in the form of responses to open-ended questions in a personal interview with the researcher.

Riessman (1993) discusses the theoretical context of the narrative inquiry process as levels of representation in the research process. The first level is *attending* to the totality of the primary experience in which the researcher is involved; being immersed in the raw data. The second level includes *telling* about the experience through the performance of a personal narrative. The third level is *transcribing* taping or writing the text, a fixation of the action into written speech, which is seen as incomplete, partial, and selective. *Analyzing*, the fourth level of representation, begins when the investigator explicitly analyzes the transcript or a number of meaningful transcripts to identify common themes and similarities and organizes them into a logical format. The fifth and

final level of *reading* comes as the researcher enters the written report to create meaning relative to the phenomenon of interest (Riessman, 1993).

### Setting

The setting for this study was Sumter County, Florida, defined as *rural* by the Florida Office of Rural Health, (Florida Rural Health Association, What is Rural?, June 6, 2011), where the Federally Qualified Rural Healthcare Center (FQRHC) is located. The Thomas E. Langley Medical Center, FQRHC, Adult Medical Unit was the setting for the recruitment of study participants following contact by the researcher with the administrator who showed interest in the study. This rural clinic serves 12,000 to 14,000 clients yearly from Sumter County and surrounding counties of Marion, Hernando, Lake, and Citrus, providing comprehensive primary healthcare as a non-profit 501(c)3 organization. In 2007, the clinic saw 12,548 total clients and had 33,124 total medical encounters. The proportion of clients with a key diagnosis of hypertension was 16.08% (*Project Health* report, February 21, 2009, data from A. Lazarius, Comptroller, cited 2009 November 19, Thomas E. Langley Medical Center; Personal conversation with Everett Kelly, CEO, Thomas E. Langley Medical Center, FQRHC, cited 2009 November 10). Following presentation of the proposal to the clinic CEO and medical/ healthcare staff, interested participants who met inclusion criteria and agreed to proceed following review of the summary of exempt research were interviewed by the researcher in a designated quiet area of the clinic.

### Protection of Human Subjects

The administrator of the rural FQHC provided a letter of interest and approval in participating in the recruitment and referral of Caucasian women who met the inclusion criteria (see Appendix I Correspondence from CEO of Research Site and Appendix J Letter of Approval for Proposed Research Site). Minimal risks of adverse effects were identified for participants. Potential risks included length of time for the interview, 60 to 90 minutes, stress during the interview associated with comments shared with the researcher, and/or concerns surrounding confidentiality. Benefits of narrative inquiry are that all findings were reported as group data. A copy of the reviewed summary of exempt research was given to each participant. There was no penalty for dropping out of the study or declining participation.

To ensure confidentiality, participants were given a unique identifying number linked to the reviewed summary of exempt research forms. This unique number was used on the corresponding audio-taped and transcribed interview. All reviewed documents and materials for the study were secured in a locked file cabinet in the researcher's home office. Electronic data files were secured on a computer that was owned and used only by the researcher in her home. The materials associated with this study will be destroyed by the researcher five years after completion of the study. Dissemination of study findings will be as a group with no individual being identifiable. There was a financial incentive of a Wal-Mart gift card (\$25) to study participants who completed the study.

### Inclusion Criteria

Recruitment for this study was through self-referral and physician referral of women who met the following inclusion criteria as identified by the *Preliminary Inclusion Screening Tool* (see Appendix B). The study was advertised by recruitment flyers placed at strategic sites in the clinic. Interested females contacted the nurse on the Adult Medical unit or the researcher directly. Upon agreeing to be part of the study, an interview was scheduled to provide study details and obtain informed consent. Inclusion criteria were specified as:

- Reside in rural Sumter County and access care at the Thomas E. Langley FQRHC
- Caucasian, age 50 or older, who obtain care at the designated FQRHC
- Have a medical diagnosis of hypertension for at least one year and are on anti-hypertensive medication(s)
- Able to read, write, and speak English
- No current history of mental illness
- Not been hospitalized for hypertensive-related diagnoses, such as uncontrolled hypertension, for at least six months
- Willing to participate in a face-to-face personal interview

Essentially, nursing studies with rural populations are strengthened by maintaining cultural connections between the researchers and the participants to improve communication by establishing rapport and developing a trusting relationship (Shreffler, 1999; Cudney, Craig, Nichols, & Weinert, 2004; Bushy, 2008).

### Participant Recruitment and Selection

Bushy (2008) notes, “the lack of cultural competence among caregivers is linked to health disparities, decreased client satisfaction, and decreased adherence to recommended medical regimens” (p. 221). Maintaining cultural congruence between the researcher and the population of interest facilitates open communication with participants as well as enhances trustworthiness of the qualitative data (Lincoln & Guba, 1985; Van Manen, 1997; Munhall, 2007). In light of the recommendations from the literature on research with rural populations, purposive sampling techniques were used to identify and recruit participants for the study. Interested potential participants contacted the researcher following exposure to recruitment flyers posted by the researcher (see Appendix G Recruitment Flyer) in the Federally Qualified Rural Health Center that was the setting for this study. Healthcare providers in the FQRHC invited and referred Caucasian women who met the inclusion criteria to the researcher to participate. If interested, the researcher’s contact information was provided to the client.

Additionally, during the interview, snowball referral by a participant was used to access subsequent participants for the study. This recruitment approach further enhanced credibility of the data since a participant was likely to be part of an informal network attributable to a shared phenomenon of interest (Tuckett, 2005). Participant recruitment was driven by the desire to learn in detail and depth about the experiences of the individuals in the study (Van Manen, 1997). Finally, the researcher assumed an active role in participant recruitment, working directly with health care providers at the clinic to pursue all referrals.

According to recommendations offered in the literature on narrative inquiry approaches, sample size to achieve saturation of data with qualitative narrative inquiry methods typically is 10 to 12 participants in investigation of a small subpopulation meeting study inclusion criteria (Polit & Beck, 2004). The decision regarding sampling numbers for this study was determined when there was evidence of data saturation (redundancy) of the data; that is to say, no new information of significance was obtained to contribute to iterative thematic development.

#### Demographics of FQRHC Research Setting

Recent clinic demographics of the study setting, Thomas E. Langley Medical Center, indicated availability of the subpopulation of interest to investigate the phenomenon of adherence practices of Caucasian women with hypertension residing in a rural area of Florida. An ongoing research study at the clinic, *Project Health*, reflected a greater number of Caucasian clients with hypertension attending the clinic over Black/African American clients with hypertension and more women than men attending the clinic for primary healthcare and management of hypertension. According to *Project Health* data (*Project Health Report*, February 21, 2009), in 2008, 7,425 female and 6,064 male clients attended the clinic for primary care. Of these clients, there were 3,127 hypertension encounters by primary diagnosis and 1,565 clients with hypertension as the primary diagnosis. In comparison of ethnicity of clients seen in 2008, there were 9,021 Caucasian clients (including Caucasians of Latino descent) and 1,857 Black/African American clients (including Black Latino). Of total clients, 18 and older, with hypertension seen in 2008, there were 1,519 Whites, 386 Blacks/African Americans, two

American Indian/Alaskan natives, four Asians, one Pacific Islander, and 126 unreported or refused to report (*Project Health Report*, February 21, 2009. Cited 2009 November 19 with permission from A. Lazarius, Comptroller, Thomas E. Langley Medical Center, Sumterville, FL.).

### Instruments

To obtain data for this study, three tools developed by the researcher were used for data collection. Initially, the *Preliminary Inclusion Screening Tool* (see Appendix B) was administered to interested women to determine if they met inclusion criteria to participate in the study. The second instrument, a *Demographic Questionnaire* (see Appendix C), was administered to the participant after obtaining the informed consent. This tool consisted of 16 items to describe the sample, called *attributes* in narrative inquiry (Richards & Morse, 2007). These attributes describe the sample including age, marital status, level of education, socioeconomic factors, and information about healthcare seeking behaviors related to their diagnosis of hypertension.

A third tool developed by the researcher, and refined with the expertise of the dissertation committee, was the *Interview Guide* (see Appendix D). Use of the *Interview Guide* ensured that all of the topics were included in the interview (See Appendix C Demographic Questionnaire; Appendix D Interview Guide). The *Interview Guide* consisted of eight open-ended questions related to the hypertensive condition and adherence practices of the participant. Each question included several prompts to help focus the participant on the phenomenon of interest relative to the research questions.



Trustworthiness and credibility of the tools were established based on review of the literature on the phenomenon of interest coupled with the clinical expertise of the researcher and that of the members on her dissertation committee. Inter-rater reliability of the tools was further addressed by the researcher completing an initial interview with a colleague to refine the interview guide and the investigator's interviewing process. Based on those findings, questions in the interview guide and interviewing procedures were refined accordingly (Riessman, 1993; Lincoln & Guba, 1985).

### Procedures

Recruitment materials and contact information for the investigator were displayed in the lobby and waiting rooms of the Thomas E. Langley FQRHC. (See Appendix G Recruitment Flyer.) The researcher was present in the Adult Medical Unit on several occasions each week at the onset of the study during recruitment to reach out and gain trust of the health care providers and clients. Potential participants were able to self-refer by contacting the researcher directly; or, via referral from a nurse employed in the setting of this study. Additionally, healthcare providers in the FQRHC agreed to invite women who met the inclusion criteria to participate in the study. When expressing an interest, the researcher's contact information was provided to the client. Once the client contacted the researcher, information was provided to her about the purpose and expectations of the study. A copy of the *Preliminary Inclusion Screening Tool* (see Appendix B) was provided to the clinician to perform the initial screening; additionally, the P.I. called or met with the clinicians to review completed screening tools prior to contacting the participant to schedule her interview. When the woman agreed to participate in an

interview, a mutually convenient time and place was scheduled for an audio-taped, face-to-face interview with the researcher. The mutually convenient private setting was identified for the interview within the clinic or somewhere in the community that was free from disruptions and noise.

Upon meeting the prospective participant, information related to informed consent was provided by the researcher (See Appendix E UCF Summary of Exempt Research); when agreeing to participate in the study, she was asked to review the summary of exempt research. A copy of the reviewed form was given to her and another maintained by the researcher. The audio-taped personal interview followed and lasted from 60 to 90 minutes (see Appendix C Demographic Questionnaire; Appendix D Interview Guide). Following these introductions, demographic questions were asked followed by those in the interview guide. Successive interviews included information related by previous participants for the purpose of member checking. If additional information or clarification was needed, a follow-up phone interview was conducted with a participant to further ensure trustworthiness of the narrative (Riessman, 1993; Lincoln & Guba, 1985). Follow-up phone calls to a few participants were initiated by the researcher for member checking and clarification.

Prior to, during, and following the interviews, the researcher developed field notes and journaling to note personal observations and impressions to enhance and validate participants' comments. Tuckett (2005) indicates the use of *field notes* and *personal journal* by the researcher contribute to the credibility and dependability of the study. These materials often contain "immediate as well as later perceptions and thoughts"

about the participants and the process. Field notes are considered a medium for employing strategies that facilitated constant comparison of data contributing specifically to *credibility* (Tuckett, 2005). Journaling also allows the researcher to be aware of personal bias by *bracketing* (documenting) preconceived ideas or beliefs she may have about adherence practices from the researcher's prior experiences.

### Content Analysis

Content analysis procedures were used to organize, analyze, interpret, and report the data interpreted from the interviews with women in this study. Qualitative content analysis is an iterative and systematic process of analyzing verbal and textual data (e.g., interviews, focus group discussions, videotapes, documents). For this study, the steps of the systematic analysis process included: 1) reviewing, transcribing, and editing the taped interviews into raw data; 2) condensing and structuring the data into thematic groups and subgroup data bits or content analytical units; 3) building, coding, and applying a category system; and 4) displaying data and results for concluding analysis and interpretation (Schilling, 2006; Mayring, 2000).

As part of the analysis procedures in qualitative research, it is necessary to determine whether the focus is on *manifest* or *latent* content. *Manifest* content refers to literal analysis of what the text says describing the visible, obvious components, or metaphorically, "front-stage" information. *Latent* content analysis involves a deeper analysis of the underlying meaning of the text and the relationship aspect of what the text means to the individual and what the researcher thinks is being conveyed, or "back-stage" information. Both manifest and latent content deal with interpretation, but the

interpretation varies in depth and the level of abstraction of the data (Graneheim & Lundman, 2004). In this study, both manifest and latent content analysis were utilized to glean a holistic interpretation of the data.

After the interview the audio-tapes were transcribed by the researcher using features of Microsoft Word software. The recorded interview, researcher's field notes, and written observations consisted of the data set, and each set was coded to link a number to the secured personal identification of each participant, in addition to the date of the interview. Coding entailed underlining key words, phrases, or sentences relevant to adherence/non-adherence to high blood pressure treatment and living with hypertension. Data accuracy and trustworthiness were addressed by an iterative process that included listening to each taped interview, transcribing, and then reading and rereading the corresponding transcript. Using comparative reflective analysis, words and phrases were coded and categorized for comparative analysis among the participants. Credibility and dependability was further addressed through member checking with participants during subsequent interviews along with follow-up phone calls to ensure that what the researcher understood was congruent with what the participant understood, stated, and inferred. Essentially, complete immersion into the raw data occurred on the part of the investigator during the analysis process.

Next, the researcher systematically organized and coded the transcribed data into major themes and sub-themes using an inductive approach. Inter-coder and inter-rater reliability was accomplished with a research colleague reviewing the transcripts of the interviews and then comparing and cross referencing thematic units and themes. When

disagreement occurred among the reviewers on an item, this was discussed; determination as to its placement was by consensus. This approach helped to ensure rigor and trustworthiness of the data analysis and the findings. (See Table 1, Measures to Ensure Trustworthiness and Rigor of Data).

Table 1: Measures to Ensure Trustworthiness and Rigor of Data

| Steps in Data Collection & Analysis                                                                                                                                      | Measures                                                                       | Description of Strategy                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sampling                                                                                                                                                                 | Purposive                                                                      | Review of participants in rural community of study as referred by primary healthcare provider in clinic with careful screening to meet inclusion and exclusion criteria. Provide thick description of phenomena of interest.                                                                                                                                                                                                                                   |
| Interviewing                                                                                                                                                             | Interview Guide                                                                | To ensure all participants are asked the same questions.                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                                                                                                                          | Content Validity                                                               | Interview guide reviewed by Nurse Practitioner, research experts in hypertension and rural community from dissertation committee, and primary care physicians in clinic.                                                                                                                                                                                                                                                                                       |
| Assuring Quality and Integrity of Data                                                                                                                                   | Bracketing, journaling, and use of field notes by researcher during interviews | Thoughts, observations and perceptions of the interviewer were recorded and analyzed with interview transcripts for purpose of reflexivity and to address potential bias. Also allows self to be distinguished from other as researcher could bond with participant during interview and blur boundaries. Careful sampling assures representation of phenomena and accuracy of findings improved credibility and transferability to other similar populations. |
| <ul style="list-style-type: none"> <li>• Trustworthiness</li> <li>• Credibility</li> <li>• Dependability</li> <li>• Confirmability</li> <li>• Transferability</li> </ul> |                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| (Polit & Beck, 2004; Mayring, 2000; Lincoln & Guba, 1985)                                                                                                                |                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Steps in Data Collection & Analysis                      | Measures                                         | Description of Strategy                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                          | Reflexivity                                      | Ensure accuracy and thoroughness of participant comments. Reference for voice pitch, expressions and any contextual information. Research colleague provided comparative coding.                                                                                                                                                                                                        |
|                                                          | Audio Recording                                  |                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                          | Inter-rater coding                               | Validation of one or more participant's interview for researcher to comment back to participant for accuracy of content by repeating brief overview of narrative back to participant to gain clarity and confirmation of data and/or phone follow-up with one or more participants.                                                                                                     |
|                                                          | Inter-rater reliability                          |                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                          | Member checking                                  |                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                          | Reflexivity                                      |                                                                                                                                                                                                                                                                                                                                                                                         |
| Content Analysis Process:<br>Transcription of Interviews | Transcription of audio-taped interviews          | All interviews were transcribed and reviewed by the researcher to allow reviews and immersion in data                                                                                                                                                                                                                                                                                   |
|                                                          | Reviewing transcripts                            | To ensure accuracy of content and data, transcripts were read, and reread before and during coding process. Data bits were organized and coded into general headings of emergent themes and subheadings using an iterative and inductive data analysis process. In addition, a research colleague reviewed and coded data for inter-coder reliability to ensure rigor of data analysis. |
|                                                          | -Dividing, organizing, and structuring data      |                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                          | -Coding data into themes and sub-themes          |                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                          | -Displaying data and coding results for analysis | Use of raw excerpts from data and general participant comments to illustrate thematic emphasis of particular points                                                                                                                                                                                                                                                                     |
|                                                          | Use of thematic data bits for thick description  |                                                                                                                                                                                                                                                                                                                                                                                         |

Upon completion of the coding process, the investigator, in discussions with a nursing colleague, reviewed the transcripts, identified potential themes and meaning for participants. Credibility of the data was further addressed with a follow-up telephone phone call to one participant to review the transcribed interview for accuracy and clarification of the content. Subsequently, verbatim excerpts from participant interviews were selected to illustrate the major themes.

### Summary

Highlighted in this chapter (3) was the methodology of this exploratory descriptive study. The setting, inclusion criteria, data collection and analysis procedures are examined in extensive detail. The subsequent Chapter (4) discusses the findings; and, concludes with a discussion of the findings and nursing implications for research, practice, policy, and education (Chapter 5).



## CHAPTER 4: FINDINGS AND RESULTS OF INQUIRY

Discussions in previous chapters included background information (Chapter 1), relevant literature (Chapter 2) and the methodology (Chapter 3) for this study which focuses on adherence behaviors among rural women living in Florida with a diagnosis of hypertension. This chapter examines the findings from data obtained through personal interviews with eleven women who met established inclusion criteria.

### Data Analysis Procedures

Data analysis procedures were discussed extensively in the previous chapter. For this study, an interview guide was used to address the four research questions focusing on the phenomenon of interest. (See Appendix D: *Interview Guide*.) The researcher established credibility and trust with participants by her presence in the clinic as a primary healthcare provider. Her visibility contributed to comfortable and open dialogue between the researcher and study participants. In answering the research questions from the inquiry and constant comparison of data analysis with review of the researcher's journal notes, the inductive, iterative data analysis yielded rich qualitative data bits with major and minor themes leading to the following conclusions.

### Participants' Attributes

The study participants consisted of a convenience sample of 11 Caucasian women age 50 or older with a medical diagnosis of hypertension, who were on medical therapy for their condition. The participants resided in rural Sumter County, Florida and obtained healthcare at Thomas E. Langley Medical Center, Federally Qualified Rural Health Center in Sumter County, Florida.

Characteristics of the participants are summarized in Table 2. Demographically, the participants ranged in age from 51 years to 67 years (mean of 58.6 years of age). Regarding marital status, of the 11, 3 (27.3%) were single; 4 (36.4%) were married; 1 (9.0%) was divorced; and 3 (27.3%) were widowed. As for the number of individuals in the participants' household, it ranged from one to six members (mean of 2 individuals per household). For employment status of the 11 participants, 1 (9.0%) worked part time; 4 (36.4%) worked full time; 5 (45.5%) were disabled; and 1 (9.0%) retired. Educational level of participants varied widely. Three participants (27.3%) completed some middle school, of which two women only completed seventh grade; and the other one completed eighth grade. Seven women (63%) graduated high school and had attended technical school and/or college; and one (9.0%) completed college.

Access to healthcare, specifically distance to a provider, often is cited as a barrier for rural residents. For this study, the distance of participants' home to the clinic ranged from less than 1 mile for 3 (27.3%), 1 (9.0%) lived less than 6 miles, and 7 (63.6%) indicated they lived from 6 miles to 10 miles away. None of the participants lived more than 10 miles from this rural health clinic. As for having farm residency, two (18.2%) participants lived on a farm, and the remainder resided elsewhere.

The respondents ranged in height from 62 inches to 69 inches (mean of 64.1 inches). Their weight ranged from 134 pounds to 297 pounds (mean of 196.9 pounds). The Body Mass Index (BMI) of the participants ranged from 24.5 [normal] to 54 [morbidly obese] (mean of 34.3 [obese]). All of the participants had been diagnosed with hypertension for some time, ranging from 2.5 years to 27 years (mean of 12.3 years). Of

the 11 participants, 8 (73%) were able to articulate their blood pressure reading from their most recent visit to their healthcare provider; 3 (27%) did not know or could not recall their most recent blood pressure reading.

Reimbursement for healthcare was another variable under consideration as this could potentially be a factor in the woman's adherence to her treatment plan. Of the 11 participants, 1 (9%) was self-pay; 2 (18.2%) had private health insurance; 5 (45.5%) had Medicare with supplemental coverage; and 3 (27.3%) were Medicaid recipients.

In respect to frequency of visiting a healthcare provider for management of their hypertension, three (27%) sought care on a monthly basis, and eight (73%) saw their provider a 'few' times every year. Several participants (N= 3) indicated at times they were not able to be seen by their provider when they needed a prescription renewal. In turn, this contributed to non-adherence to their treatment regimen. Yet, all reported they could be seen in the Urgent Care clinic if they were acutely ill, were concerned about their blood pressure being elevated, or simply to have their blood pressure checked. When asked about the last time participants had seen their healthcare provider for their hypertensive condition, two (18.2%) indicated it was less than one week ago; for three (27.3%) it was less than one month ago; for five (45.5%) it was less than 6 months ago; and for one (9%) it had been more than 6 months ago. When asked if they were ever hospitalized for management of acute hypertension, only two (18.2%) participants indicated hospitalization occurred at the onset of their diagnosis.

In assessing if the participants were able to state the name and side effects of their prescribed high blood pressure medication and if they took the medication as directed,

eight (73%) were able to verbalize their medication and some side effects, as well as the prescribed regimen; three (27%) did not know the name of their medication, much less the side effects of the drugs. Based on comments of the latter group, the researcher questioned whether or not these participants fully adhered to their recommended treatment regimen as well. See Table 2: (N= 11).

Table 2  
Attributes of the Participants (N=11)

| Attribute                          | Result          | Range       |
|------------------------------------|-----------------|-------------|
| Age                                | Mean 58.6 years | Range 51-67 |
| Marital Status                     |                 |             |
| Single                             | 3/11 (27.3%)    |             |
| Married                            | 4/11 (36.4%)    |             |
| Divorced                           | 1/11 (9.0%)     |             |
| Widowed                            | 3/11 (27.3%)    |             |
| People in household                | Mean 2.5        | Range 1-6   |
| Employment                         |                 |             |
| Part time                          | 1/11 (9.0%)     |             |
| Full time                          | 4/11 (36.4%)    |             |
| Disabled                           | 5/11 (45.5%)    |             |
| Retired                            | 1/11 (9.0%)     |             |
| Education                          |                 |             |
| Some middle school                 | 3/11 (27.3%)    |             |
| High School graduate/ some college | 7/11 (63.6%)    |             |
| College degree                     | 1/11 (9.0%)     |             |

Table 3  
Place of Residence

| Location                | Result       |
|-------------------------|--------------|
| Distance home to clinic |              |
| Less than 1 mile        | 3/11 (27.3%) |
| Between 1-6 miles       | 1/11 (9.0%)  |
| Between 6-10 miles      | 7/11 (63.6%) |
| > 10 miles              | 0            |
| Live on a farm          |              |
| Yes                     | 2/11 (18.2%) |
| No                      | 9/11 (81.8%) |

Table 4  
Access to Healthcare

| Healthcare Data                                            | Result           | Range                                |
|------------------------------------------------------------|------------------|--------------------------------------|
| Pay for health care                                        |                  |                                      |
| Self-pay                                                   | 1/11 (9.0%)      |                                      |
| Health insurance                                           | 2/11 (18.2%)     |                                      |
| Medicare                                                   | 5/11 (45.5%)     |                                      |
| Medicaid                                                   | 3/11 (27.3%)     |                                      |
| How long diagnosed with HBP                                | Mean 12.3 years  | 2.5 -27 years                        |
| Know recent BP                                             |                  |                                      |
| Yes                                                        | 8/11 (73%)       |                                      |
| No                                                         | 3/11 (27%)       |                                      |
| Height                                                     | Mean 64.1 inches | 62-69 inches                         |
| Weight                                                     | Mean 196.9 lbs   | 134-297 lbs                          |
| BMI- Body Mass Index                                       | Mean 34.3 Obese  | 24.5 (normal) to 54 (morbidly obese) |
| Visits to healthcare provider                              |                  |                                      |
| Weekly                                                     | 0/11 (0%)        |                                      |
| Monthly                                                    | 3/11 (27%)       |                                      |
| Few times/ year                                            | 8/11 (73%)       |                                      |
| When I feel like I need to                                 | 0/11 (0%)        |                                      |
| Last appointment with healthcare provider for hypertension |                  |                                      |
| Less than one week ago                                     | 2/11 (18.2%)     |                                      |
| Between one week and one month ago                         | 3/11 (27.3%)     |                                      |
| Less than 6 months ago                                     | 5/11 (45.5%)     |                                      |
| More than 6 months ago                                     | 1/11 (9.0%)      |                                      |

Table 5

Hypertension: A Chronic Condition

| Item                                                     | Result       |
|----------------------------------------------------------|--------------|
| Hospitalized for high BP                                 |              |
| Yes                                                      | 2/11 (18.2%) |
| No                                                       | 9/11 (81.8%) |
| Knows names, dosing of BP medications, takes as directed |              |
| Yes                                                      | 8/11 (73%)   |
| No                                                       | 3/11 (27%)   |

### Content Analysis: Major Themes

The data analysis process focused on each of the four research questions common themes with supportive narratives. The next section highlights predominant themes that emerged from the semi-structured interviews with the 11 participants.

#### Research Question 1

What is the understanding and self-described impact/implication of hypertension for Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?

Themes that emerged for the above research question were the ‘sneaky’ nature of the condition, ‘stress brought it on’, knowledge of family history, and the potential for fatalistic consequences.

#### ‘A Sneaky Disease’

A theme that predominated in the interviews related to the gradual and insidious onset of hypertension; described by one participant as having a “sneaky” impact on one’s life. She described it in the following manner.

Sneaky, it [high blood pressure] has been very sneaky... and I couldn’t — I can’t always tell when it has been high. They put me on blood pressure medication right away and had me come back to make sure it [BP] was coming down.

Two of the women first became aware of their hypertensive condition when they were hospitalized for a stroke or heart attack. A participant who also worked as a nurse at the clinic in which this study took place described her experience in these words.

The first time 12 years ago when I was first diagnosed, I was there for three days. They took me out of here in an ambulance. My blood pressure was 250 over 200-something. The second time, they had to take me out of here and that was a couple years later. I have had two heart



catheterizations, and I have been to the emergency room about three times... I was working and I felt like my head was going to explode, so I asked them to take my blood pressure because I was not on anything. They took it and it was 250 over 200-something. They made me an appointment to see a cardiologist the same day. I was not feeling well and they sent me home. I went to my mother-in-law's home. They took my BP there and sent me to the hospital. I thought in case I go home and don't wake up, at least someone would know where I was... It was pounding in the back of my head. I have, I guess angina, but I'm not sure. I get chest pain every once in a while, too.

### 'Stress Brought It On'

Another theme associated with the insidious development of hypertension related to the role of stress associated with work-related responsibilities and family dynamics.

Nearly all the women shared the impact of life stressors manifesting as:

...bad headaches, heart racing and feeling anxious when going back to nursing school and work stress where blood pressure was 140/100 and I did not know it... the healthcare provider adjusted medications and I felt better.

One woman put it these words:

...stress and [lack of] time would be the worst thing. Yeah, too many meetings in the evening and not being able to exercise...eat standing up and on the go.

A participant who also worked at the clinic in which this research occurred offered the following information about her stress and the manifestation of symptoms:

A headache happens when my BP is up. I try and relax. We have windows at work where I can sit and breathe to relax. That's about it if I am at work. At home, I will lie down and relax. To get away from work helps. Usually, it's work because I go home by myself and have very little stress at home where it's just me and the cat. Just to sit and relax and getting away from that window at work helps a lot to unwind.

Women employed outside of the home indicated they often coped with home and family stressors by ‘going to work’ to temporarily remove themselves from the situation, regardless of how symptomatic they felt at that time. The question that emerges from these reports is: does this coping behavior reinforce the strong work ethic often noted in the literature on rural populations?

#### ‘Potential for Fatalistic Consequences’

Knowledge of family members and friends who were diagnosed with hypertension also contributed to participants’ understanding of this condition and its potential long-term and sometimes devastating consequences. One participant discussed why managing blood pressure was important to her:

It’s just important...if people don’t realize what they are doing when they are not being compliant with their medications, how it can be a long lived out thing. I watched my grandmother. She started having strokes when I was just a little girl and it continued until she died. She always felt bad. You’ve got to take care of yourself and it is in more ways than one. Everything affects everything in my opinion...I have such a bad history in my family that it makes me want to make sure that I’m taking care of myself. I saw how my grandmother suffered and my dad also. Two weekends after he died, I quit smoking. He was a big smoker and drank like a fish until 8 years after he started having his problems and he just quit cold turkey. You look at that and realize that’s in your blood. I’ve read so much with genetics. All those little things bundled together just make me see that I’ve got to do better.

Another woman shared this family story:

It was gradual when I was diagnosed with high blood pressure. When the doctor wanted to put me on medication, which was scary because it was something that I had been putting off. Because of the family history, well, my father,...nervous, it made me nervous. My father had his first heart attack when he was 16. My mother had two heart attacks-one each during childbirth in her twenties. My father was overweight and he was an alcoholic. He had high blood pressure, diabetes, and congestive heart failure. So, I could see me following in his footsteps. The doctor had been monitoring me because my blood pressure had

been going up and going up. Then, he finally just said, “Look, it’s time to start medication.” He said I could not put it off anymore. He laid it on the line and said, “this could happen, the heart attacks, the strokes. This is reality.” So, when you start getting confronted with that kind of situation or circumstance, it wakes you up a little bit so you decide either you’re going to do what you’re supposed to do or you’re going to kill yourself.

Still another participant expressed her concern in the following words:

I know that the top number had been a little higher, but nobody ever said to do anything. When I talked to the doctor, he said we know you were at work and you know I came right in from working down the hall to the doctor’s appointment and it could be that you just had that white coat syndrome thing going on. Every once in a while, we get really uptight over something at work, but you know it (BP) just had never been out of sight like that.

Yet another participant was frightened by an acute hypertensive condition that reminded her of her mother’s symptoms who, ultimately, had a stroke at a young age.

...nosebleeds, headaches...then fast heart rhythm...then, hospitalized for high blood pressure and [heart] rhythm issues. I’m a terrible patient and I did not want to take medications. I had to go the hospital and the rhythm broke on the way. The heart pill and water pill made all the difference. I can tell when my BP is high. I feel a lot of pressure in my head and I try to rest. My BP is up during [times of] stress. [My] Mother had a stroke at a young age and another stroke at age 62 that left her paralyzed. [Knowing about her condition] makes me take my BP medication ‘cause I don’t want to have a stroke.

#### Research Question 2

What is the meaning of treatment adherence for Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?

#### Research Question 3

What are the self-described adherence practices of Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?

Participants’ responses to the second and third research questions had similar, redundant, and often overlapping themes. Thus, these two questions are both addressed in

the next section. Common themes that emerged in the analysis of the narratives included, ‘adherence; do what the doctor tells you to do,’ and the role of social support [systems.]

‘Adherence; Do What the Doctor Tells You to Do!’

Understanding ‘adherence’ and adherence behaviors associated with the diagnosis of hypertension had different meanings for respondents. One participant explained:

Adherence. . . behaving, staying on a regimen. My weight would be a big thing and I really need to work on that. I try to manage stress and we were doing Tai-Chi after work twice a week. But the provider that was doing the Tai-Chi with us has been so busy and has had such a stress-filled life that she has not been able to do it with us lately.

Other participants defined adherence in more general terms:

...Listen to your doctor. Stick to your diet. Take care of yourself...high blood pressure is a silent killer, when they don’t understand that high blood pressure is not cured, it is something you have to maintain.... doing what the doctor told you to do... compliance...means I do it and I do it right. That’s a good question though for a lot of folks...Doing what I need to do to make sure that my blood pressure stays in control including the exercise, the dieting, and the medication regimen.

Three participants explained adherence by listing specific lifestyle behaviors, for example:

I take my medications at about 5:00 A. I don’t feel any different, as a matter of fact, I feel good after I take them, because I don’t have the headaches... I take my medication and listen to the doctor. If I’m not feeling good, I go down to see my doctor...Following the advice and suggestions of your doctor to do this, this, and this. Adhering is sticking to it. It’s following it the way that it was ordered or prescribed.

Adherence, or the lack thereof, was sometimes associated with medication side effects, expressed in this way: *This lisinopril (blood pressure medication) ... I do have that little cough that is so irritating ... Goodness, do I really have to take this pill?*

One participant elaborated on the role of the primary care provider in her medication adherence behaviors.

I put my morning dose with my vitamins and then my night dose goes in a special place in my bathroom. That's the last thing I do, but I have to be that way or I will forget. ...The P.A. (Physician Assistant) told me about watching my salt and following the diet. Exercise is always good. She was trying to get me to exercise more and I did. I started walking at lunchtime, even if it was just a quick walk. That was good. Now, I am starting to do a little bit of weights.

Another participant shared her frustrations at not being able to get an appointment with her primary care provider to have her prescription renewed before running out of medication and was also quite concerned about the side effects of her medication.

I was on another medication for the blood pressure before this last medication. It caused my legs, feet, and ankles to swell up. With that, it caused severe pain so I started reading the paperwork from the pharmacy. It said to contact the doctor and everybody was doing vacation time. My refills were due before I could get in to see the doctor and I said to myself I'm not going to take this medication anymore. So, I didn't refill the medication and then when I went to see the doctor, I explained that I did not refill it. I didn't intentionally try to stop taking the medicine before I saw him. He said it was good that I stopped taking it and he put it down as an allergic reaction. Within three or four days after I stopped taking it, the swelling began to dissipate and I was feeling better.

The participant, whose primary language was Spanish, did not fully understand the meaning of *adherence*. After the researcher explained what it meant, the participant elaborated on her adherence patterns. *I went to the doctor because I did not know what was wrong with me. ...taking all of the prescribed medication ... no salt ... losing 35 pounds the first year after having high blood pressure.*

#### Role of Social Support [Systems]

Another theme associated with a participant's adherence behaviors was a woman's social support system, which include members in her immediate household that

included nuclear and extended family, as well as friends and coworkers. One participant, in particular, highly valued the support of her longtime friend:

Then, I got the lecture from my friend about—you know the damage to the internal organs when you are not even aware of what those numbers are. That is probably the number one reason why I make sure that I do what I'm supposed to do.

One participant greatly valued the support her spouse offered:

Adherence ... doing what I need to do to make sure that my blood pressure stays in control including the exercise, the dieting, and the medication regimen. My husband is a good supporter. He is good to talk to and...a pretty smart guy.

Another woman shared the following insights about the influence of her daughter on

her adherence behaviors:

When my daughter first came down three years ago, she stayed with us and she was on me all the time. She would cook and if I cooked anything I was not supposed to cook, she would not let me eat it. She came with me and told the doctor how everything was. Even now that she is not staying at the house, every time she sees me, 'Mom, you're not supposed to do that,' or 'Mom, you're not supposed to eat that.' ... Even my boy, whom I never thought would, says, 'Mom, are you supposed to eat that?' I say it won't hurt if I have a little bit, just a bite, and he says, 'You better not, Mom, we don't want you to get sick.'

Social support systems also seemed to be detrimental to one particular a woman's adherence behavior. For example, one participant described the negative influence her significant other had on her adherence behaviors. *No, my partner ... comments once in a while [about doing what I do]. But I just let it go in one ear and out the other. I don't want to go back in the hospital.* Another participant shared, *It just ran up [BP] ... Well, it doesn't help when the one you live with decides to argue with me.*

Based on this woman's report, it becomes obvious that negative input from family and friends impacted her motivation to adhere to recommended treatment protocols to manage her hypertensive condition, which leads to findings for the fourth research question in this study.

#### Research Question 4

What are the self-described deterrents to the recommended hypertension regimen for Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?

Participants identified various challenges that served as deterrents to adhering to their recommended hypertensive management regimen. Common themes that emerged from the analysis of the narratives focusing on this question included *not connecting with the provider*, *limited health literacy abilities*, *financial constraints*, *side effects of the medications* (*'medications made me sick'*), and *'others first, me last.'*

##### Not Connecting with the Provider

A prevailing theme that emerged from the interviews related to the women having rapport and their comfort level with the healthcare provider. Conversely, not having rapport negatively influenced a participant's understanding of the recommended interventions to manage their hypertension. One woman described the importance of the good relationship with her doctor and the role her mother played in reinforcing adherence to the prescribed treatment for her hypertension.

Yes, I take the pills because it's important. If you don't take them, it's not beneficial. It would be hard if it weren't for my Mom. If it weren't for her helping me at times to get the refills, I would not be able to get them... You need to understand. You have to have a good relationship with your doctor. You have to feel comfortable with your doctor and you have to be open and willing to listen to what they have to say and at least try to follow... I try. I mean I definitely don't add salt, but you know with the labels and stuff... We get a lot of food from the food bank and sometimes you get what you get so you have to work around it... The weight is the last piece. The drinking and drugging, the smoking and the weight is the last piece... When I eat out, it's the restaurant food. If you get a salad and a soup or something like that, that's okay but the French fries and the burgers and all. Sometimes, I'm just so tempted.



### Health Literacy Abilities

Another theme was associated with the participants' health literacy abilities. One participant reported her frustration with the imprecise and incomplete information she was given when first diagnosed with hypertension.

They told me I needed to exercise and watch my diet. The point is that I did not understand what to do because they just told me 'do that,' but they did not specifically tell me what to do. I did not know what to do, 'Exercise,' - well, I exercise, I ate and all that, but I did not completely know what to do. They just gave me some written information.

Another woman, while wanting to adhere to her medical regimen, received only written information but did not fully understand what was expected of her.

I don't eat salt but they put me on a diet. I read up myself. I don't eat salt, but I drink a lot of soft drinks. I smoke, but it's my body and it's my choice...I usually take my meds in the morning and if I have to go somewhere, I take the dose that I'm supposed to take with me.

The researcher questioned the literacy abilities of individuals who had not completed middle school, in particular, a Latino woman who met all of the inclusion criteria with a seventh grade education. Even though she was comfortable in speaking, reading, and writing the English language, she still brought her granddaughter to the interview to assist in communicating with the researcher. This participant reported not receiving any written information and only being told what to do by the physician when first diagnosed. At a subsequent appointment, she obtained care from a new doctor in town who also was of Latino origin. He provided written information in Spanish about hypertension and how this condition should be managed. This material helped her to understand the condition and the importance of adhering to the prescribed treatment regimen. The comments of this woman, in particular, reinforced the importance of

establishing rapport and appraising the health literacy abilities of a patient; then tailoring and offering culturally and linguistically appropriate educational resources.

### Financial Constraints

Financial constraints were another recurrent theme. One participant shared her importance of adherence to her treatment plan in relating to the complications of hypertension in her patients at the clinic with various conditions of high blood pressure, strokes, kidney disease, or heart attacks who may not have been able to afford their medications, thus affecting their disease progression from not being on medical therapy.

I took it (high blood pressure) seriously because I see what strokes do to the women and men, but I think of the women in this area. I kind of related to my patients because we have a lot of people that are in a bad way because they let their blood pressure go and don't have the money. I, fortunately, am lucky enough to afford my little pill and get to the doctor, but that is not always what goes on around here. I don't want to have a stroke. My mother had her first and only myocardial infarction (heart attack) at age 53 and died, so I am consciously aware of that all of the time.

Another participant described her adherence behaviors in these terms:

Yes, I take the pills because it's important. If you don't, they're not beneficial. It would be hard if it weren't for my Mom. If it weren't for her helping me at times to get the refills, I would not be able to get them.

A participant employed in the clinic shared this insight:

It is having enough money to afford better food to eat and stay away from salty food. With me, it's just laziness and that it's all here at work- the salty pretzels and all. With a lot of the patients we see, the better foods for you are the more expensive. Everybody around here is adding potatoes, rice and things with salt to make the meals stretch, so there are a lot of problems. Usually, the first thing I mention is salt to the patients because it is something that they can hopefully do something about. I need to do that myself. I am aware because I see it all the time, but some people don't know.

### ‘The Medication Made Me Sick’

Side effects of the medications also can be a deterrent to adherence, especially if the individual does not have a good understanding about the disease and the progressive effects on the body. The following quote is from a woman who stopped her blood pressure medication due to the side effects:

I hadn't seen the doctor in over two years and when I went, he gave me one prescription that totally made me sick. I stopped it and he gave me another pill. It (BP) has been good, 117 over 78. I take my BP at night and get a lower number. But sometimes it is up to 180 during the day. It just runs up (BP). Well, it doesn't help when the one you live with decides to argue with me. I've got a weird system. Any kind of medication, if I'm on it any length of time, my body does what it wants to and the medicine doesn't work right.

Another participant had this experience:

I was on several different kinds and they had to keep switching me because it would choke me. They changed me from Norvasc to this when I went on Medicaid because Medicaid wouldn't pay for Norvasc... This one I'm on now I have that "something" in my throat that bothers me ... I didn't say anything to him about it. I complain so much to him.

The woman who completed eighth grade and who had been diagnosed as having had several strokes, described the day-to-day challenges associated with her blood pressure medications:

I don't take that one, (referring to blood pressure medication with diuretic, water pill), that's a pee-pill, ain't it? No, I don't take it—I pee enough. I'll tell you honestly. It makes me pee a thousand times a day... I take the other pill for blood pressure twice daily. I only take it, (water pill), when my blood pressure goes high. I can usually tell if my blood pressure is too high or my blood sugar is too high or too low because I'll get the wiggles. I know that don't make sense to you, but I can tell. I get shaky and irritable. I'm honest about it.

### ‘Others First; Me Last’

One particular participant further shared that she takes care of others in her family first, her mother in particular, which affects her not taking her blood pressure medication on time or at all some days.

I don’t take them [BP medications] on time. That’s one of my problems. I’m more ‘take care of you’ than ‘take care of me.’ I have to write a note on the refrigerator. ‘Did I take this, did I eat today?’ Because . . . I don’t remember. I’m always taking care of somebody else first and not taking care of me. I never was one to take care of me first. I’m not ‘me-first’ but ‘everybody else first.’ . . . I don’t eat salt. Unless it comes on it, I don’t put salt on it. I don’t even have salt in my house. If somebody comes to my house and says, ‘where’s the salt?’, I say ‘You can go to the store and buy you some,’ . . . I may not be the smartest cookie, but I’m not stupid.

Following this interview, the participant asked the researcher to check her blood pressure. The researcher took her to the Urgent Care Clinic, where her blood pressure was very elevated at 245/114 mm Hg. She was advised by the physician to go immediately to the hospital by ambulance, which she refused as she had to go home to take care of her mother. The researcher thought she had left the clinic by ambulance but the woman was outside and told the researcher, “I’m a survivor; I’ll come back to the clinic tomorrow. I have to go take care of my mother.”

### Summary

In summary, findings obtained from the personal interviews with eleven women provided insights about the subtle onset of hypertension, along with day-to-day challenges of managing the condition, and the behaviors used by the women to adhere to medically prescribed treatment protocols. This chapter elaborated on major themes that emerged during data analysis provided by personal interviews with 11 women who lived in a rural Florida County. The next and final chapter (5) of this dissertation discusses

findings, along with study limitations and implications for nursing practice, education, policy and research.

## CHAPTER 5: DISCUSSION

Preceding chapters of this document included background information (Chapter 1), relevant literature (Chapter 2), methods (Chapter 3), and findings (Chapter 4) relative to the phenomenon of interest. This, the final chapter, includes a discussion of the findings, and concludes with study limitations and nursing implications.

### Phenomenon of Interest

This study focused on the phenomenon of interest, adherence practices of Caucasian women with hypertension from a rural area of Florida. An increased prevalence of heart disease associated with untreated or under-treated hypertension has been noted among women, in particular those residing in rural areas of the United States (Taylor, Hughes, & Garrison, 2002; Fahs & Kahlman, 2008). Therefore, the researcher was interested in this vulnerable population to gain an understanding of how these women managed their hypertension when dealing with the stressors of life in a rural setting with limited resources and often limited access to healthcare. In particular, the researcher questioned how some women remained adherent to their treatment regimen for their hypertension in spite of daily life stressors in their rural environment, while others in similar situations were non-adherent, thus adversely affecting their hypertension and health outcomes.

The participants in this study all lived less than 10 miles from the clinic. Two of the women rode their bicycles or walked to the clinic for their healthcare. Three of the others had limited transportation associated with the need to share a vehicle with other family members. Close proximity to the large, full-service Federally Qualified Rural

Health Center was appreciated by the participants. All of them indicated this facility allowed them to access affordable healthcare in a convenient location, which may not be the case in other isolated rural settings. The Institute of Medicine report on Rural Health Care (2004) reflects the smaller, poorer, and more isolated a rural community is, the more difficult it is for residents to access high-quality, affordable health care services (Executive Summary, *Quality Through Collaboration: The Future of Rural Health Care*, Institute of Medicine Report on Rural Health Care, 2004). County Health Rankings 2011 for 67 Florida counties, ranked lowest to highest reflecting best health to poorest health, indicated Sumter County, the site of this study, ranked 24 of 67 in health outcomes, overall health of the county, and 23 of 67 in health factors, i.e., factors that influence the health of the county (County Health Rankings, 2011, Robert Wood Johnson Foundation and University of Wisconsin Population Health Institute). The participants reinforced the importance of shared cultural connectiveness with their primary healthcare provider. Wu et al. (2008), in their study of men and women with chronic heart failure, noted a positive relationship with the client and his or her healthcare provider may result in improved adherence.

#### Participants' Attributes

Participants ranged from 51-67 years of age with mean age of 58.6 years. Interestingly, 4 of 11 of the participants were employed full-time and one part-time; 5 were disabled; and 1 was retired. Florida rural demographic data indicates that 26.5% of the rural population had not completed high school in 2000, compared to 19.7% of the urban population (Rural Health and Rural Human Resources for Florida, USDA-ERS,

2010). Participants in this study had more years of formal education than the Florida rural average. Of the 11, 7 completed high school and had some additional education in technical or vocational schools. Of those having post high school education, two were employed in the clinic and met all of the inclusion criteria. However, these two participants probably had a higher knowledge level regarding the disease process and management of hypertension based on their technical education and work related experiences.

Only 2 of the 11 participants lived on a farm. This was somewhat surprising in light of the fact that Sumter County relies heavily on agriculture production. However, this finding reflects national demographics with about 2% of the total U.S. population being farm residents.

Regarding paying for health care, of the 11, 1 participant was self-pay, 2 had health insurance, 5 were on Medicare, and 3 were Medicaid recipients. This attribute is slightly higher than national health care coverage data indicating that at least 20.6% of all non-metro population age 18-64 years had no health insurance coverage. Of that population, about 15.6% could not afford to see a doctor in the previous year due to financial constraints (Rural Health Snapshot, 2010, Center for Disease Control and Prevention. Behavioral Risk Factor Surveillance Survey, 2008).

Of the participants, eight women (73%) were able to articulate their recent blood pressure numbers from home readings or recent clinic visit. Additionally, eight women could name their blood pressure medications and reported taking these as directed. The remainder (27%) could not cite the name of their medications, and they reported not



taking these as directed. In comparison, national data on non-adherence to anti-hypertensive therapy indicates in spite of availability of effective medical therapy for hypertension, only 31% of persons with hypertension have controlled blood pressure (Krousel-Wood, Thomas, Munter, & Morisky, 2004). Lack of adequate blood pressure control in persons on medical therapy is the result of non-adherence or an inadequate treatment plan (Hartley & Repede, 2011; Qureshi, Hatcher, Chaturvedi, & Jafer, 2007). These findings could be associated with either the longevity of the diagnosis or, perhaps, the education the women received from their healthcare provider.

Three (27%) of the women reported skipping doses or stopping their medications due to side effects. Interestingly, none of the women stopped their medications due to cost or difficulty affording the drugs. Four (36%) of the women shared that their provider gave them inexpensive generic drugs (that they could afford most of the time). This strategy could be useful for other healthcare providers to facilitate adherence behaviors in the current economic climate. The United States Department of Economic Research Service indicated a poverty rate of 19.4% exists in rural Florida, compared to urban areas of the state with a 14.7% poverty rate (Rural Health and Rural Human Services Resources for Florida, 2010).

Body Mass Index (BMI) is noted to be a risk factor for hypertension and cardiovascular disease. For the women in this study, the BMI ranged from 24.5 (normal BMI) to 54, (morbidly obese), with the mean being 34.3 (obese). This participant attribute reflects national rural health data with national average BMI 30 (obese) among all U.S. rural populations (Rural Health Snapshot, 2010, Behavioral Risk Factor

Surveillance System, 2008). Thus, nurses caring for obese hypertensive clients from rural settings need to discuss recommendations for healthy weight loss during each visit.

### Research Question 1

What is the understanding and self-described impact/implication of hypertension for Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?

Emerging themes from the narrative inquiry as participants addressed this interview question were, '*a sneaky disease,*' '*stress brought it on,*' '*knowledge of family history,*' and the '*potential for fatalistic consequences.*'

Interestingly, two of the nurse participants were slow to recognize their own hypertension, until their symptoms, often insidious in onset and associated with stress, such as severe headaches with high blood pressure readings, interfered with their work. Many participants also shared their fears of family members who had developed hypertension leading to multiple strokes and heart disease with poor health outcomes. The women related that they may have been slow to recognize their own symptoms of high blood pressure or had ignored their hypertension due to fear of following family history of complications from severe, often undetected hypertension.

These findings are important for healthcare providers to emphasize to their hypertensive clients the importance of routine screening for early recognition of elevated blood pressures and the need for frequent blood pressure monitoring due to the insidious nature and silent progression of hypertension. Many clients choose to ignore their elevated blood pressure and blame it on work and family stress, forgetting to take their

medications or not adhering to their treatment plan. The healthcare provider needs to assess the knowledge level of a client regarding his or her understanding of hypertension and recognition of symptoms of elevated blood pressure and supply appropriate educational materials. The healthcare provider can partner with the client to encourage adherence to his or her treatment plan and provide anticipatory guidance. The advanced practice nurse can refer these clients to mental health professionals to manage their fears of developing complications of elevated blood pressure similar to family members with hypertension and heart disease. Public education on hypertension and symptoms associated with heart disease would be beneficial in improving adherence and decreasing complications of untreated hypertension, rather than going on as these women have, unaware of their disease progression until there is an emergency.

Several female participants shared that they were too busy caring for others, both at work and home with dependent family members, to take time out for their own healthcare needs. These women had recognized that they knew when their blood pressure was high and identified similar headaches or feeling jittery but would ignore these symptoms until the headaches or symptoms became so severe to interfere with their daily activities and their work. These findings reflect those noted by Weinert and Hill (2005) in their *Women to Women* study of rural women from Montana with chronic illnesses who communicated with each other by computer. These women identified health as the ability to work in spite of their medical limitations. Interestingly, some participants in this study kept working in heavy physical jobs despite a known high blood pressure, feeling as though it was more important to be working. Work was of greater concern than their

elevated blood pressure or prescription medication to manage the condition (Weinert & Long, 1987; Weinert & Hill, 2005).

These findings are important for healthcare providers to understand the strong work ethic among rural residents who often choose to ignore their symptoms and put their health last, often working until a medical emergency occurs forcing their attention. Developing a therapeutic relationship with the client is critical to emphasize daily adherence to medical and lifestyle treatment of their hypertension.

Findings in this study indicated a few of the women were not able to keep their appointments for their hypertension due to work or family schedules, and one woman ran out of her medication for one month while waiting for an appointment with her healthcare provider due to vacation. All the women identified better control of their hypertension and improved adherence when they had a close relationship with their healthcare provider who had provided them with written instructions on their medications and diet. One woman related a language barrier with her provider that contributed to her non-adherence to medical therapy, which resolved when she asked for a different provider who spoke Spanish facilitating understanding of her hypertension, medications and diet instructions.

### Research Question 2

What is the meaning of treatment adherence for Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?

‘Adherence: Do What the Doctor Says to Do’

Women with hypertension may be unwitting non-adherents to recommended therapy, associated with cultural beliefs about health/illness or economic conditions. For

example, adherence or the lack thereof can include a range of behaviors such as taking lower dosages or less frequent dosages than prescribed. Another behavior noted in this study in two of the women was only taking antihypertensive medications when feeling 'symptomatic.' In spite of these behaviors, an individual may still believe she is adherent to the prescribed treatment plan (Krousel-Wood, Thomas, Munter, & Morisky, 2004). This was noted in the participants as 8 of 11 (73%) knew the names of their antihypertensive medication and took the drugs as prescribed. However, 3 of 11 (27%) shared various cultural and socioeconomic reasons for not adhering to their medical therapy as directed; one indicating non-adherence due to concern about potential side-effects, one sharing concern regarding cost of her medications affecting her non-adherence when she could not afford her medication; and one expressing family obligations in caring for her mother coming before caring for herself and remembering to take her medications.

Implications for healthcare providers from these study findings are to maintain a therapeutic relationship with the client to promote adherence to their prescribed treatment plan and schedule close follow-up appointments for careful monitoring. Healthcare providers can develop a successful and acceptable treatment plan by identifying potential barriers of non-adherence such as concern regarding potential side effects early, troubleshooting financial concerns by supplying inexpensive generic medications for hypertension or offering to assist the client to apply for Medicaid if needed, and having an awareness of family responsibilities that may affect keeping clinic appointments or remembering to take prescribed medication.

### Research Question 3

What are the self-described adherence practices of Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?

#### Role of Social Support [Systems]

Another emerging theme of interest was the *role of social support systems* among the rural women interviewed. Several women shared how their spouses, close friends, and pets including one woman's cat helped them all to be able to adhere to their hypertension treatment, exercise, and be able to unwind at home after a stressful day at work. One woman shared how her coworker helped her deal with work stress:

Well, we watch out for each other. If we need a second away, we can go outside, we can walk. It is really us down there, we are real close. Relaxing, sometimes is not the easiest thing when you're in that situation even if you can walk away from it.

Participants commented on headaches and physical symptoms from work stress associated with their blood pressure being elevated. The women had various ways of coping with their work stress through their friends, family members, coworkers, and pets. A nurse participant noted:

To get away from work helps. Usually, it is just work because I go home by myself and have very little stress at home where it's just me and the cat. Just to sit and relax and getting away from that window at work helps a lot to unwind.

In particular, one woman shared how her friend helped her adhere to her hypertension treatment:

Then, I got the lecture from my friend about—you know the damage to the internal organs when you are not even aware of what those numbers are. That is probably the number one reason why I make sure that I do what I'm supposed to do.

This was also noted by Predeger and Mumma (2004) in their research with rural women living with chronic illness. The authors identified the importance of relationships of the women with their family members, close friends, and pets to promote adherence to their treatment regimens. Strong relationships with family and close friends contributed to the stamina and hardiness observed by this researcher during the interviews where several women commented how their spouses, mothers, or a close friend had encouraged them to come to the clinic for their check-ups and take their medication(s) for their hypertension.

Therefore, the health professional can encourage support groups for the women to meet and share common concerns or discuss topics of interest to promote social support and encourage adherence. The healthcare provider needs to identify when social support from family members could be detrimental, affecting non-adherence if clients indicate strong influence of family or close friends offering inaccurate medical advice about their prescribed treatment plan.

#### Influence of Rural Setting on Adherence Practices

Participants interviewed confirmed research findings of rural populations in that the women associated good health as being able to work without limitations; many delaying seeking care for their hypertension until their symptoms prevented them from doing their daily work. Several of the women chose to live in the rural community to maintain close ties with their family, depending on their family for assistance in paying for their medications and food in exchange for taking care of their family. Some participants expressed delaying or postponing their medical visits for their hypertension

due to the pressing needs of caring for their family members, expressed in the emerging theme of ‘Others first; Me last’ often seen among rural populations (Lee & Winters, 2004; Boutain, 2001).

The healthcare provider can work within these participant-identified constraints by helping the women keep written reminders about appointments, having a flexible schedule to see women who may have been too busy and missed their appointment needing medication refills, and devising a method to remind them to take their medication as directed and on time. For example, one of the women who cared for her mother made herself a chart which she kept on her refrigerator listing all her medications as a reminder, which she checked off after taking each medication.

#### Research Question 4

What are the self-described deterrents to the recommended hypertension regimen for Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?

#### ‘Not Connecting with the Provider’

Several of the participants expressed frustration that health care providers in federal qualified rural health clinics often have short term (‘revolving door’) assignments. Thus, it is problematic for patients to establish a relationship with the health care providers who are employed in these settings. This staffing pattern resulted in several women refusing to see another primary care provider who recently began employment at the clinic. Consequently, missing appointments with their provider resulted in these



women running out of prescribed medications to manage their hypertension; thereby contributing to non-adherence practices.

Therefore, another emerging theme of '*not connecting with the provider*' was expressed in several interviews, whether related to a change in provider, uncaring provider; or noted by one woman, difficulty communicating with her provider due to a language and cultural barrier. This contributed to non-adherence to their medical therapy in some of the women in that they did not connect with their provider; therefore, they did not keep their clinic appointments as scheduled, and a few of the women let their blood pressure medications run out that were only filled during their appointments. Additionally, a few women shared that their provider did not give them adequate oral or written instructions on their hypertension and medical therapy; thus, they did not understand what to do.

In order to facilitate connecting with the healthcare provider, it is important to develop a therapeutic, caring relationship with the client and identify any potential language or cultural barrier(s) that could lead to non-adherence. If a communication or cultural barrier is identified, it is important to find a different health care professional of similar ethnicity for effective communication and improved adherence in order to develop a mutually acceptable prescribed treatment plan. In addition, providing the woman with written information in her language on hypertension, diet, and her medications will contribute to improved adherence.

In a study of rural women in Montana with chronic illnesses, Lee & Winters (2004) identified similar themes of the women wanting to reside close to their healthcare

facilities to improve access and the value they placed on a close relationship with their healthcare provider. As noted in the study, participants delayed seeking medical care until symptoms prevented them from doing their daily work. This was also identified as a major emerging theme of '*a sneaky disease*' expressed to this researcher from the interviews. Several of the nurse participants in the study who also worked in the clinic, were unable to tell when their blood pressure was high, other than feeling tired and a few with gradual worsening headaches. They delayed their initial evaluation for their hypertension as they were too busy working, until a few had to be carried out of the clinic with severe elevated blood pressure and various complications affecting their ability to work. Many shared their beliefs that family and work '*stress brought it on,*' another emerging theme the women associated with their hypertension. Several women shared that they came to work to get away from family stressors. However, they had additional work stress building up gradually over time, ultimately contributing to their insidious onset of hypertension.

Another emerging theme expressed by Lee and Winters (2004) was the notion of an individual's choice: choice of residence, occupation, workplace, and healthcare providers. Participants chose to live in rural communities because of family ties. Some had moved to an urban area but chose to return to their hometown. Their choice of healthcare providers was dependent on availability of financial resources, knowledge of trusted known provider, time of day, weather conditions, and belief of the available quality of care (Lee & Winters, 2004). These findings were also transferrable to the study

findings of this researcher in a similar small population of rural women with hypertension, and perhaps, other chronic health conditions.

#### Health Literacy Abilities

Of the 11 female participants, 3 had not completed middle school, including 2 who had only completed seventh grade. One of these women with Spanish as her primary language, had difficulty understanding English, relating difficulty understanding her treatment regimen for her hypertension. She shared that she was told to take her medications and follow her diet but did not understand what her medications did and the importance of taking them as directed daily along with following a low sodium diet. Following her request for a Spanish-speaking healthcare provider, her adherence improved when her new doctor explained her medications and diet in Spanish. She developed a stronger bond with her new doctor related to cultural congruence, positively affecting her adherence practices.

In this study health literacy abilities varied widely. On one end of the literacy spectrum was the Latino woman who had only completed seventh grade with limited health literacy; to the opposite end, that being clinic employees having a more in depth understanding of the topic. Interestingly, the clinic employees stated they did not realize they had an elevated blood pressure until they experienced an urgent crises. This finding is consistent with literature on rural women with chronic illness who maintained a strong work ethic in spite of the limitations of their illness (Predeger & Mumma, 2004; Long & Weinert, 2006). Long and Weinert (2006) identified research findings that rural residents often delay seeking healthcare until they are gravely ill and unable to work.

Health literacy is important and the literature suggests that this should be identified as the ‘sixth vital sign’. One’s literacy abilities play a significant role in adherence and are a major cause of medical errors. Health professionals need to understand the importance of assessing accurate health literacy levels in their client encounters. To effectively communicate with clients with a low literacy level, healthcare providers need to recognize the problem and create a client-centered, shame-free environment (Cornett, 2004). Clients often do not understand medical terms or may be anxious in their interaction with the healthcare provider, which may limit their health literacy.

Morris, MacLean, Chew, and Littenberg (2006) developed a single-item literacy screener tool to identify those clients with low health literacy. This item would be helpful for nurses and healthcare providers to use in their client interviews. This tool, found to have a good sensitivity when compared to other validated tools, consists of one question, “How often do you need to have someone help you when you read instructions, pamphlets, or other written material from your doctor or pharmacist?” Responses range from “1” (never) to “5” (always). A result of “2” included all clients potentially in need of assistance from the healthcare provider in order to understand the materials provided (Morris, MacLean, Chew, & Littenberg, 2006).

### Cultural Connectiveness and Social Support

The importance of cultural connectiveness with the healthcare provider was noted by Morisky (2008) and Dunbar-Jacobs et al. (2003), who identified various strategies that influenced adherence by clients that addressed multiple factors including knowledge of

the importance of the regimen, belief in benefits of the treatment, and individual attitudes toward medication-taking. Environmental and social factors, such as the interpersonal relationship between the provider and the client along with social support from family and friends, can impact adherence behaviors. Factors shown to improve client adherence include perceived support from the provider, client satisfaction with the medical visit, and the support of family members in the home environment.

Therefore, healthcare providers need to seek feedback during client encounters to determine client understanding of instructions to improve adherence; maintain a good, cultural congruence with the client to improve communication; and assess if the client has support at home to afford his or her medications and remember to take them as directed.

### Healthcare Access

Access to healthcare was important to all the participants, and several of the women stressed some frustration with difficulty getting their prescriptions filled in a timely manner, contributing to occasional non-adherence if they ran out of a medication while waiting to refill their prescriptions. Overall, each of the participants felt they had good access to healthcare as they lived less than 10 miles from the clinic. They were mostly happy with their healthcare and liked their healthcare providers.

### ‘Financial Constraints’

Interestingly, the researcher found that the cost of medications for hypertension was not always identified as contributing to non-adherence, as many of the women related they were taking inexpensive generic medications they could afford but would

forget to take their medication when busy with family obligations or not take the medications due to side-effects. Three of the women interviewed commented on difficulty eliminating foods high in sodium from their diets, thus adversely affecting adherence to their hypertension regimen contributing to elevated blood pressure and fluid retention with weight gain. This was largely due to decreased finances as less expensive food is often higher in sodium. One nurse participant stated:

I find that with patients, it is money to afford better food to eat and stay away from salty food. With me, it's just laziness and that it's all here at work- the salty pretzels and all. With a lot of the patients we see, the better foods for you are the more expensive. Everybody around here is adding potatoes, rice and things with salt to make the meals stretch, so there are a lot of problems.

Another participant shared:

I don't add salt to anything. I just have never been a salt freak myself and a lot of processed stuff, you know. I don't eat a lot of processed stuff, but I notice that there are certain things that when I do – that my ankles might swell a little bit and so I stay away from them, you know, for the most part. It's just no fun having your ankles swell and it is not particularly comfortable.

These findings are significant for nursing in caring for rural populations because foods with higher sodium foods tend to be lower in cost and are more readily available to them. Over time, increased dietary sodium content on a daily basis will contribute to worsening hypertension and non-adherence to the recommended dietary sodium restriction in clients with hypertension.

Similar findings were confirmed in the literature on rural populations where hypertensive clients had a higher intake of dietary sodium with decreased dietary calcium and potassium, linked with increased hypertension. Control and management of

hypertension among rural populations is an area where more nursing research and work to improve adherence is needed (Fahs & Kalman, 2008).

‘The Medication Made me Sick’

One woman shared: *This lisinopril, I do have that little cough that is so irritating...Goodness, do I really have to take this pill?* While another woman commented:

*I don't take that one—(referring to a water pill for her hypertension) — “that's a pee pill, ain't it? No, I don't take it—I pee enough. I'll tell you honestly. It makes me pee a thousand times a day. I take the other pink pill for blood pressure twice a day.*

Strategies to encourage adherence by clients must address multiple factors including client knowledge of the importance of the regimen, belief in benefits of the treatment, and individual attitudes toward medication-taking. Healthcare professionals need to have clients bring their prescription bottles to each visit and have the client tell the provider what they are taking from each bottle, how often and exact dosing schedule to determine adherence. This will encourage the client to share with the provider if he or may be taking the dose incorrectly, is skipping doses, or if he or she stopped the medication due to perceived adverse effects; all important areas to address during the medical visit. Often healthcare providers will be quick to add another medication for hypertension due to perceptions of poor control of blood pressure only to find out that the client quit taking the medication or ran out of the medication.

### ‘Others First; Me Last’

One woman who experienced a stroke at a young age and had only completed the eighth grade shared:

“I don’t take them (BP medication) on time. That’s one of my problems. I’m more ‘take care of you’ than ‘take care of me.’ I have to write a note on the refrigerator. ‘Did I take this, did I eat today?’ Because I don’t remember. I’m always taking care of somebody else first and not taking care of me. I never was one to take care of me first. I’m not ‘me-first’ but ‘everybody else first’.”

Later, after this interview, the same woman reflected: *I’m a survivor; I’ll come back to the clinic tomorrow. I have to go take care of my mother.*

This was said after the researcher found her to have a severely elevated blood pressure in Urgent Care and she refused to go to the hospital as recommended since she had to take care of her mother at home. Journal notes of the researcher reflected this woman had an inner strength, often seen in rural women, as she shared major family stressors raising her young children following domestic violence with head injury from her partner, leaving her with a disabling stroke and memory impairment. In spite of her condition, she had a system of making a check-off chart on her refrigerator that reminded her to eat and take her medication, in addition to keeping track of her mother’s appointments and medications.

This theme is relevant to nurses and healthcare providers, due to the multiple roles that women are expected to perform daily, all which may have an adverse effect on their health at times. Healthcare providers can encourage women who are wearing ‘many hats’ in their multiple family and work roles to take time out for themselves with effective stress management techniques. Additionally, the healthcare provider can facilitate



reminders to take medications daily or as directed, monitor their blood pressure a few times per week reporting abnormal readings, and stress to clients the importance of routine medical follow-up.

### Implications for Nursing

The findings of this study have implications for nursing practice, research, education, and policy. Each of these categories will be examined in the next section of this chapter.

#### Practice

The findings of this study on adherence behaviors of rural women having a diagnosis of hypertension can offer insights to clinicians who design treatment plans to manage this chronic condition. First and foremost, it is important to assess what the client knows about her diagnosis, specifically, risk factors and management of the condition. It is also important to have an understanding of the client's economic resources, social support system, and literacy abilities. Subsequently, the health professional must collaborate with the client to develop a treatment plan that is tailored to these dimensions. Further, a treatment plan entails more than prescribing a medication, be it a brand name or generic medication. The plan must address lifestyle modifications that take into consideration the client's living arrangements, lifestyle, and motivation to manage this condition. Then, the plan must be written in a manner that is best suited for the client's literacy abilities. Clinicians should provide educational resources that reinforce the verbal instructions. Strategies should be offered to assist the client to adhere to the plan within her social and environmental constraints. Rural clients also may require assistance to

access to a health care provider associated especially in regions that are designated by the federal government as medically underserved.

### Education

This study has the following implications for nursing education. Nurse educators have a responsibility to expose all students, at the under graduate and graduate level, to information about the rural lifestyle and access-related challenges to healthcare. Clinical experiences should be arranged for students in rural settings along with providing rural content relative to the local and regional context. Continuing education offerings also should be developed and disseminated for nurses who provide care to clients from rural settings in order to design realistic therapeutic regimes. These strategies can go a long way to improve client adherence behaviors, be it with women having a diagnosis of hypertension, or some other chronic health condition.

Likewise, nursing curricula must incorporate content on health literacy among diverse populations. Along with assessment of health literacy abilities, students in nursing education programs at all levels should be able to design educational materials that fit various literacy abilities. Then, the clinician should be able to appropriately inform clients about managing a particular health condition. Finally, the clinician must have the ability to implement evidence-based practice guidelines and tailor these to the needs of their clients, be it in rural as well as urban contexts.

### Research

Nursing research implications for this study are threefold.

First, replicate this study with women with a diagnosis of hypertension as well as other chronic diseases, who reside in other rural regions nationally as well as internationally. The study also should be replicated with other ethnic and racial groups to determine if these findings are congruent with those aggregates.

Second, design intervention studies that address adherence behaviors relative to hypertension along with other chronic health conditions. Studies need to be carried out with women who live in rural areas in particular, to determine if, and how, access to a health care providers impacts adherence practices

Third, design studies using multi-method approaches to identify social determinants that impact the prevention of a particular health condition or medical diagnosis; as well as factors that promote adherence to evidence based therapeutic treatment plans for women residing in diverse rural contexts, nationally as well as internationally.

### Health Policy

Nursing implications for health policy include, among others, advocating for primary, secondary and tertiary prevention programs that target hypertension. For example, assist communities to offer appropriate education to select aggregates regarding at risk lifestyle behaviors that contribute to hypertension. Advocate for, and support hypertension screening programs that target individuals and groups who are at risk for developing hypertension and the associated sequel. As clinicians, tailor intervention treatment plans that fit a client's literacy abilities and contextual realities to promote adherence behaviors to manage hypertension.

Another policy implication directly addresses advocating for equitable reimbursement policies established at the federal level for advanced practice nurses who provide primary care services to clients to diagnose and manage hypertension. This implication is particularly important for advanced practice nurses who provide services to clients in rural and underserved regions, and in federally qualified rural health clinics, such as the one that was the setting for this study.

Finally, nurse clinicians with expertise in hypertension and other chronic illness should serve as consultants to nurses and other types of health care providers to educate about the prevention, diagnosis and management of hypertension. Nurses having a rural background are critically needed to inform health professionals and policy makers about the preferences and needs of residents who live in more remote and medically underserved regions.

#### Limitations of the Study

The following limitations are noted for this study.

First, this study included a small convenience sample of older females who resided in one rural Florida County and who obtained health care in a particular federally qualified rural health clinic. Women residing in other settings might have differing perspectives based on their contextual realities.

Second, this study included one woman of Latino origin who met the inclusion criteria. This woman, in particular, had less than an eighth grade education and had limited literacy abilities. The comments of this participant may not be representative of other Latinos in particular or other rural women in general.

Third, two of the participants who met the inclusion criteria were also employed at the clinic in which this study took place, thus were exposed to patients with varying conditions and diagnoses, including hypertension. Therefore, their perspectives and knowledge level about hypertension could be different from other rural women who have not had that background exposure. Additionally, they were personally acquainted with the researcher; and this, too, could have influenced how they responded during the interview.

Finally, the researcher is a novice with the narrative inquiry approach. Thus, findings could differ with additional experience with qualitative methods in general and narrative inquiry in particular.

### Summary

Hypertension has been noted to be a health disparity among rural women, but little has been published in the literature on this at risk group. Given the information deficit, this qualitative study focused on the phenomenon of adherence behaviors of eleven women with a diagnosis of hypertension who resided in a particular rural county in Florida. Narrative inquiry and content analysis were used to collect and analyze data. This chapter included a discussion of the findings according to each problem statement. Included in this final chapter were nursing implications for practice, education, policy and research; along with limitations of the study.

## APPENDIX A: EMERGING THEMES WITH SUPPORTING NARRATIVES

| Research Question                                                                                                                                                            | Major Themes                                          | Supporting Narratives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1 What is the understanding and self-described impact/implication of hypertension for Caucasian women with a diagnosis of hypertension who live in a rural area of Florida? | A sneaky disease                                      | <i>Sneaky, it [high blood pressure] has been very sneaky. I can't always tell when it's (blood pressure) high</i>                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                              | Stress brought it on                                  | <i>I was working and felt like my head was going to explode. My blood pressure was 250 over 200-something.</i><br><br><i>bad headaches, heart racing, feeling anxious when going back to nursing school and work stress where blood pressure was 140/100...elevated, I didn't even know it.</i>                                                                                                                                                                                                                                                |
|                                                                                                                                                                              | Family History: Potential for fatalistic consequences | <i>Stress and time would be the worst thing...too many meetings; eat standing up and on the go.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                              |                                                       | <i>It's just important...if people don't realize what they are doing when they are not being compliant with their medications, how it can be a long lived out thing. I watched my grandmother. She started having strokes when I was just a little girl and it continued until she died. She always felt bad. You've got to take care of yourself and it is in more ways than one. Everything affects everything in my opinion...I have such a bad history in my family that it makes me want to make sure that I'm taking care of myself.</i> |

| Research Question                                                                                                                                                            | Major Themes                                  | Supporting Narratives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #2: What is the meaning of treatment adherence for Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?                                     | Adherence: Do what the doctor tells you to do | <i>Listen to your doctor. Stick to your diet. Take care of yourself...I say to my patients, high blood pressure is a silent killer, when they don't understand that high blood pressure is not cured, it is something you have to maintain.... doing what the doctor told you to do... compliance...means I do it and I do it right.</i>                                                                                                                                                                |
| #3: What are the self-described adherence practices of Caucasian women with a diagnosis of hypertension who live in a rural area of Florida?                                 | Role of social support [systems]              | <p><i>Then, I got the lecture from my friend about—you know the damage to the internal organs when you are not even aware of what those numbers are. That is probably the number one reason why I make sure that I do what I'm supposed to do.</i></p> <p><i>Yes, I take the pills because it's important. If I don't take them, it's not beneficial. It would be hard if it weren't for my Mom. If it weren't for her helping me at times to get the refills, I would not be able to get them.</i></p> |
| Research Question                                                                                                                                                            | Major Themes                                  | Supporting Narratives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| #4: What are the self-described deterrents to the recommended hypertension regimen for Caucasian women with a diagnosis of hypertension who live in a rural area of Florida? | Not connecting with the provider              | <i>You need to understand. You have to have a good relationship with your doctor. You have to feel comfortable with your doctor and you have to be open and willing to listen to what they have to say and at least try to follow...I try</i>                                                                                                                                                                                                                                                           |
|                                                                                                                                                                              | Limited health literacy abilities             | <i>They told me I needed to exercise and watch my diet. The point is that I did not understand what to do</i>                                                                                                                                                                                                                                                                                                                                                                                           |



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Financial constraints

*because they just told me 'do that,' but they did not specifically tell me what to do. I did not know what to do, 'Exercise,' - well, I exercise, I ate and all that, but I did not completely know what to do. They just gave me some written information.*

*Yes, I take the pills because it's important. If you don't, they're not beneficial. It would be hard if it weren't for my Mom. If it weren't for her helping me at times to get the refills, I would not be able to get them.*

*I find that with patients, it is money to afford better food to eat and stay away from salty food. With me, it's just laziness and that it's all here at work- the salty pretzels and all. With a lot of the patients we see, the better foods for you are the more expensive. Everybody around here is adding potatoes, rice and things with salt to make the meals stretch, so there are a lot of problems.*

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| Research Question | Major Themes                  | Supporting Narratives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | ‘The medication made me sick’ | <p><i>I hadn’t seen the doctor in over two years and when I went, he gave me one prescription that totally made me sick. I stopped it and he gave me another pill... Any kind of medication, if I’m on it any length of time, my body does what it wants to and the medicine doesn’t work right.</i></p> <p><i>I was on several different kinds [BP medication] and they had to keep switching me because it would choke me... This one I’m on now I have that “something” in my throat that bothers me...I didn’t say anything to him about it. I complain so much to him.</i></p> |
|                   | ‘Others first; Me last!’      | <p><i>I don’t take them (BP medication) on time. That’s one of my problems. I’m more ‘take care of you’ than ‘take care of me.’ I have to write a note on the refrigerator. ‘Did I take this, did I eat today?’ Because I don’t remember. I’m always taking care of somebody else first and not taking care of me. I never was one to take care of me first. I’m not ‘me-first’ but ‘everybody else first’.</i></p>                                                                                                                                                                 |

## APPENDIX B: PRELIMINARY INCLUSION SCREENING TOOL

This is a brief questionnaire to determine if interested potential participants meet inclusion criteria for the proposed study. This tool will be administered by the clinician at the clinical research site in the Adult Clinic or by the researcher in screening potential interested recruits in the Adult Clinic. If recruits have given informed consent and meet inclusion criteria below, they will be contacted by the researcher to schedule their interview at a mutually convenient time and place.

1. Do you reside in Sumter County?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

2. Do you go to Thomas E. Langley Medical Center, Federally Qualified Rural Health Center, for your health care?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

3. Are you a Caucasian female age 50 or older?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

4. Have you been diagnosed with hypertension, high blood pressure, in the past year or earlier and take medication(s) for your high blood pressure?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

5. Are you able to read, write, and speak English?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

6. Do you have a current history of mental illness?

\_\_\_\_\_ Yes

\_\_\_\_ No

7. Have you been hospitalized for hypertension –related illness, such as uncontrolled high blood pressure, in the past 6 months?

\_\_\_\_ Yes

\_\_\_\_ No

8. Would you be willing to participate in a face-to-face personal interview with the researcher?

\_\_\_\_ Yes

\_\_\_\_ No

#### **Appendix B Preliminary Inclusion Screening Tool (Continued)**

If Questions 1-5 and 8 are answered “Yes” and Questions 6 and 7 are answered “No,” the recruit would meet all inclusion criteria and be referred to the researcher to contact to schedule their interview.

## APPENDIX C: DEMOGRAPHIC QUESTIONNAIRE

**Directions:** We are meeting today so I can learn from you what it is like to live with High Blood Pressure or Hypertension. I will be asking you several questions about your background, where you live.

Next, I will be asking you about your diagnosis of hypertension (high blood pressure) and what it is like to live with that condition.

Answer the questions as well as you can. I want to assure you - there are no right or wrong answers.

Your responses will help me to better understand the challenges and ways of coping, so I can provide more effective care to other women who have high blood pressure. (See Appendix B which participant will then complete and proceed with the interview.)

#### DEMOGRAPHIC INFORMATION

Directions: Please respond to the following questions. (The researcher will read the questions to the participant and mark the answers below.)

1. Age: \_\_\_\_\_

2. Marital Status:

\_\_\_\_\_ Single

\_\_\_\_\_ Married/Living with a partner

\_\_\_\_\_ Divorced

\_\_\_\_\_ Widowed

3. How many people live in your household? \_\_\_\_\_

4. Employment status:

\_\_\_\_ Employed outside the home: Yes \_\_\_\_ No \_\_\_\_

If yes:

\_\_\_\_ Full time \_\_\_\_ Part time

If no:

\_\_\_\_ Homemaker

\_\_\_\_ Retired

\_\_\_\_ Disabled

\_\_\_\_ Other

5. Education: (Check highest level achieved)

\_\_\_\_ Did not complete High School

\_\_\_\_ High School Graduate/ Graduate Equivalent Diploma

\_\_\_\_ Some college/ vocational school

\_\_\_\_ Bachelor's degree

\_\_\_\_ Post Graduate degree

6. Distance from your home to the Thomas E. Langley Rural Health Medical Center:

\_\_\_\_ Less than one mile

\_\_\_\_ Between 1-5 miles

\_\_\_\_ 6-10 miles

\_\_\_\_ > 10 miles

7. Do you live on a farm, a tract of land on which crops and often livestock are raised for livelihood? (Retrieved February 22, 2010 from <http://dictionary.references.com/browse/farm>).



\_\_\_\_ Yes

\_\_\_\_ No

8. How do you pay for your health care?

\_\_\_\_ Self-pay

\_\_\_\_ Health insurance

\_\_\_\_ Medicare

\_\_\_\_ Medicaid

Now, let's talk about your diagnosis of High Blood Pressure.

9. How long have you been diagnosed with High Blood Pressure? (years) \_\_\_\_\_

10. Do you know your blood pressure numbers?

\_\_\_\_ Yes

\_\_\_\_ No

If yes, what are these? \_\_\_\_\_

11. What is your height? \_\_\_\_\_

12. What is your current weight? \_\_\_\_\_

***Calculated BMI:*** \_\_\_\_\_ *(Completed after the interview)*

13. How often do you see your health care provider?

\_\_\_\_ Weekly

\_\_\_\_ Monthly

\_\_\_\_ Yearly

\_\_\_\_ Few times / year

\_\_\_\_ When I feel like I need to (briefly describe this situation/symptoms)

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14. When did you last have an appointment with your health care provider for your hypertension?

\_\_\_\_ Less than one week ago

\_\_\_\_ Between one week and one month ago

\_\_\_\_ Less than 6 months ago

\_\_\_\_ More than 6 months ago

\_\_\_\_ More than one year ago

15. Have you been hospitalized because of your blood pressure?

\_\_\_\_ Yes

\_\_\_\_ No

If yes, when? How long? For what reason?

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16. Let's discuss the medications you take to manage your blood pressure.

What are the name(s) of your medications? How often should you take these?

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## APPENDIX D: INTERVIEW GUIDE

### Questions & Prompts

1. Let's talk some more about when you were first diagnosed with hypertension:
  - What were your symptoms? Reason for going to the doctor.
  - How did the doctor or healthcare provider treat this condition after you were first diagnosed? Exercise? Diet? Medication? Other?
2. What did you know or understand about high blood pressure when you first found out you had this condition?
  - Any family history of high blood pressure?
  - Other information sources?
3. Are you aware when your blood pressure is high(er)?
  - If yes, what are your symptoms?
  - What do you do at that time?
4. When you are prescribed medications to manage your blood pressure, how does this impact your day to day activities?
  - Are you always able to take your medications as prescribed? If not, why not?
  - Finances? Time constraints? Side effects? Other?
  - Has your medication regimen changed any? If so, how?
5. Tell me about other things, besides medication that your doctor told you to do to manage your blood pressure?
  - How were you able to adjust to those recommendations at first?
  - Later? After a few weeks or months?
  - Currently?
6. When I use the term "adherence" or "compliance," what does that mean to you?
7. If you are able to follow your health care provider's directions for adherence
  - Can you give me examples of how you adhere to manage your hypertension?
    - nutrition/dietary inclusion or restrictions
    - weight management
    - exercise
    - stress management
    - other
  - Can you give me examples of how you cannot or do not adhere to your health care provider's treatment plan to manage your high blood pressure?
  - How do events or people influence your adherence to your health care provider's recommendations to manage your high blood pressure?
    - What works?
    - What is a deterrent or, of no benefit to managing your high blood pressure?
8. Is there anything else you would like to tell me, or advise another woman who has hypertension or high blood pressure?

Thank you very much for your input to help me with my study. I may contact you if I have any further questions about your responses or to clarify information you have shared with me.

## APPENDIX E: SUMMARY EXPLANATION OF RESEARCH



### Explanation of Research

**Title of Project: Adherence Practices of Caucasian Women with Hypertension Residing in Rural Florida: An Exploratory Study**

**Principal Investigator:** Jeanne Hopple, MSN, ARNP-BC, FNP-C, Doctoral Candidate

**Other Investigators:** None

**Faculty Advisor:** Angeline Bushy, PhD, RN, FAAN, UCF, College of Nursing

**Sponsor:** None

**Research Site:** Federally Qualified Rural Health Center- Thomas E. Langley Medical Center, Sumter County, FL.

**You are being invited to participate in a research study. This is a voluntary study and whether or not you take part is up to you. You must be a Caucasian women age 50 or older with high blood pressure and go to Thomas E. Langley Medical Center for your health care.**

- The purpose of the study is to explore how women with a diagnosis of high blood pressure living in a rural area of Florida experience daily life and cope with that condition and the prescribed treatment plan.
- You will be interviewed by the nurse practitioner, Jeanne Hopple, MSN, ARNP, a doctoral student at the University of Central Florida, Orlando, Florida. Your interview will be held in a private location at the clinic or another location of your choice. The interview will be audio-taped. You will be asked several questions about what it is like to live with hypertension and your prescribed treatment plan.
- The interview will last 60-90 minutes. The researcher may contact you again by phone for additional information.
- There are no anticipated risks associated with participating in this study. Your identity or any remarks connected with your personal identifying information will not be revealed at any time during the taped interview or after this study is completed.
- There is compensation of a \$25 Walmart gift card as a direct benefit to you for participation if you complete the study.



University of Central Florida IRB  
IRB NUMBER: SBE-10-06835  
IRB APPROVAL DATE: 4/26/2010

- **Your identity will be kept confidential.** The information gathered during your interview and possible phone call will not contain any personal identification linking to you or your personal location. Your information will be linked to a code number and the audiotapes will be destroyed after they are transcribed into a locked computer data file.
- **Voluntary participation:** Your participation in this study is voluntary. **There is no penalty for not participating.** Your doctor or nurse practitioner will not be upset with you or refuse care if you chose not to participate.

**Study contact for questions about the study or to report a problem:** If you have questions, concerns, or complaints: Jeanne Hopple, MSN, ARNP, Doctoral Candidate, University of Florida, College of Nursing at (352) 239-0755 or by e-mail at [jhopper@comcast.net](mailto:jhopper@comcast.net) Faculty Supervisor: Dr. Angeline Bushy, PhD, RN, FAAN, Professor and Bert Fish Chair, University of Central Florida, College of Nursing, Daytona Beach at (386) 506-4032 or by e-mail at [abushy@mail.ucf.edu](mailto:abushy@mail.ucf.edu)

**IRB contact about your rights in the study or to report a complaint:** Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.



University of Central Florida IRB  
IRB NUMBER: SBE-10-06835  
IRB APPROVAL DATE: 4/26/2010



## APPENDIX F: IRB TRAINING COURSE

### CITI Collaborative Institutional Training Initiative

#### Human Research Curriculum Completion Report Printed on Sunday, January 25, 2009

**Learner:** Jeanne Hopple (username: jhopple1)  
**Institution:** University of Central Florida  
**Contact Information:** 9 Sunrise Court  
 Ocala, FL 34472-5022 United States of America  
 Department: University of Central Florida- College of Nursing  
 Phone: 352-239-0755  
 Email: jhopple@comcast.net

**Group 2.:** Social / Behavioral Research Investigators and Key Personnel

#### Stage 1. Basic Course Passed on 01/25/09 (Ref # 2442749)

| Required Modules                                             | Date Completed | Score      |
|--------------------------------------------------------------|----------------|------------|
| Introduction                                                 | 01/16/09       | no quiz    |
| History and Ethical Principles - SBR                         | 01/18/09       | 5/5 (100%) |
| Defining Research with Human Subjects - SBR                  | 01/18/09       | 5/5 (100%) |
| The Regulations and The Social and Behavioral Sciences - SBR | 01/18/09       | 5/5 (100%) |
| Assessing Risk in Social and Behavioral Sciences - SBR       | 01/18/09       | 5/5 (100%) |
| Informed Consent - SBR                                       | 01/18/09       | 4/4 (100%) |
| Privacy and Confidentiality - SBR                            | 01/18/09       | 4/4 (100%) |
| Research with Prisoners - SBR                                | 01/18/09       | 4/4 (100%) |
| Research with Children - SBR                                 | 01/19/09       | 5/5 (100%) |
| Research in Public Elementary and Secondary Schools - SBR    | 01/20/09       | 4/4 (100%) |
| International Research - SBR                                 | 01/21/09       | 4/4 (100%) |
| Internet Research - SBR                                      | 01/22/09       | 5/5 (100%) |
| HIPAA and Human Subjects Research                            | 01/24/09       | 2/2 (100%) |
| Conflicts of Interest in Research Involving Human Subjects   | 01/25/09       | 2/2 (100%) |
| UCF                                                          | 01/25/09       | no quiz    |

**For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.**

Paul Braunschweiger Ph.D.  
 Professor, University of Miami  
 Director Office of Research Education  
 CITI Course Coordinator

Return

## APPENDIX G: RECRUITMENT FLYER

## **A Research Study with White Women who have High Blood Pressure**



Are you a White woman over the age of 50 years  
with a diagnosis of high blood pressure?

Do you live in Sumter County, Florida?

Do you obtain healthcare at Thomas E. Langley  
Medical Center?

Would you be willing to participate in my study  
which looks at “Women with Hypertension Living in  
Rural Florida” and receive a \$25 Wal-Mart gift card?

If you answered yes to these four questions, you  
would be expected to participate in a private audio-  
taped interview with the nurse researcher to discuss  
what it is like to live with high blood pressure and

your treatment plan. The interview will last about one hour and will be held at a convenient time and place.

If you are interested in participating, please contact:

JEANNE HOPPLE

(352) 239-0755

[jhopple@cox.net](mailto:jhopple@cox.net)

This study is being conducted as a dissertation requirement at the University of Central Florida. For more information, you may contact Angeline Bushy, PhD, RN, FAAN, faculty advisor, at [abushy@mail.ucf.edu](mailto:abushy@mail.ucf.edu) or 386-506-4032.

## APPENDIX H: UCF IRB STUDY APPROVAL AND CLOSURE LETTERS



University of Central Florida Institutional Review Board  
Office of Research & Commercialization  
12201 Research Parkway, Suite 501  
Orlando, Florida 32826-3246  
Telephone: 407-823-2901 or 407-882-2276  
[www.research.ucf.edu/compliance/irb.html](http://www.research.ucf.edu/compliance/irb.html)

### Approval of Exempt Human Research

From: UCF Institutional Review Board #1  
FWA00000351, IRB00001138

To: Jeanne Hopple

Date: April 26, 2010

Dear Researcher:

On 04/26/2010, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review: Exempt Determination  
Project Title: Adherence Practices of Caucasian Women with Hypertension  
Residing in Rural Florida: An Exploratory Study  
Investigator: Jeanne Hopple MSN, ARNP, MSN, ARNP-BC, FNP-C  
IRB Number: SBE-10-06835  
Funding Agency:  
Grant Title:  
Research ID: N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Joseph Bielitzki, DVM, UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 04/26/2010 01:09:14 PM EDT

A handwritten signature in black ink, appearing to read "Joanne Muratori".

IRB Coordinator



University of Central Florida Institutional Review Board  
Office of Research & Commercialization  
12201 Research Parkway, Suite 501  
Orlando, Florida 32826-3246  
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276  
[www.research.ucf.edu/compliance/irb.html](http://www.research.ucf.edu/compliance/irb.html)

### Acknowledgement of Study Closure

From : UCF Institutional Review Board #1  
FWA00000351, IRB00001138

To : Jeanne Hopple

Date : June 01, 2011

Dear Researcher:

On 6/1/2011, the IRB conducted an administrative review of the FORM: Study Closure Request that you submitted in iRIS. The study has been closed within the system.

This report is in regards to:

|                 |                                                                                                                |
|-----------------|----------------------------------------------------------------------------------------------------------------|
| Type of Review: | Study Closure                                                                                                  |
| Project Title:  | Adherence Practices of Caucasian Women<br>with Hypertension Residing in Rural Florida:<br>An Exploratory Study |
| Investigator:   | Jeanne Hopple                                                                                                  |
| IRB Number:     | SBE-10-06835                                                                                                   |
| Funding Agency: | None                                                                                                           |
| Research ID:    | N/A                                                                                                            |

As part of this action:

- The research is permanently closed to enrollment.
- All participants have completed all research-related interventions.
- Collection of private identifiable information is completed.
- Analysis of private identifiable information is completed.

Thank you for notifying the IRB of this modification.

On behalf of Kendra Dimond Campbell, MA, JD, UCF IRB Interim Chair, this letter is signed by:

Signature applied by Joanne Muratori on 06/01/2011 11:34:45 AM EDT

IRB Coordinator

Submission Reference Number: 011695



## APPENDIX I: CORRESPONDENCE FROM CEO OF RESEARCH SITE

Dear Ms. Hopple

We would love to talk to you and also to review your work.

We always want to help anyone in need in the health care field.

Call Cindy Hager at (352) 569-2936 and she will put us together. I will let her know that we need to talk.

Look forward to seeing you.

Everett Kelly

CEO

--Original Message-----

From: jhopple@comcast.net [<mailto:jhopple@comcast.net>]

Sent: Sunday, October 12, 2008 7:43 AM

To: info@langleymedicalfoundation.org

Subject: Standard Message from: Jeanne Hopple ARNP

Hi, I am a Family NP at Ocala Family Physicians in Ocala and a Doctoral Candidate in the College of Nursing science at the University of Central Florida. I used to work at Community Health Services in Ocala and met a few of your administrative team in 2007 when you were up there. I am developing my dissertation research proposal to do qualitative research involving semi-structured interviews with rural southern women with established hypertension to learn more information about their adherence behaviors. I am currently developing my research proposal and obtaining IRB approval from UCF. Would your administrators and medical staff be open to reviewing my research proposal, meeting me and allowing me to do research at your facility interviewing a few interested participants who would qualify for my study next winter after I receive IRB approval and defend my proposal?

Thanks very much for your consideration,

Jeanne Hopple ARNP

352-680-0331

## APPENDIX J: LETTER OF APPROVAL FOR RESEARCH SITE



1425 S. US 301 • Sumterville, Florida 33585

(352) 793-5900 • (888) 298-5510 Administration Fax (352) 793-6269 •  
Medical Fax (352) 793-9558

October 1, 2009

Jeanne Hopple  
9 Sunrise Court  
Ocala, FL 34472-5022

Dear Ms. Hopple:

By way of this letter I want to inform you that we would be honored to have you do your research project here. We are a Federally Qualified Community Health Center and as such our mission is to provide quality primary health care regardless of your ability to pay. I am sure that our medical staff can supply the patient participants you desire.

My administrative assistant, Cindy Hager (352-569-2936), will be happy to arrange a date for you to come and meet our medical and senior staff together. I will inform our Medical Director, Dr. Robert Carraway, that you will be coming and what you need for your project so that he can attend to those needs before you come.

I also must caution you that we need to be assured that there will be no violations of the HIPPA law. With your educational credentials I know that you are well aware of our need for this security.

We look forward to having you do your work here and perhaps other researchers would find our center suitable for other research.

Please let me know if I can be of further assistance to you.

Best Regards,

Everett Kelly, CEO

## APPENDIX K: HOPPLE CV

**Jeanne Hopple, MSN, ARNP-BC, ACNP-BC, FNP-C, Doctoral Candidate**

University of Central Florida, College of Nursing

12201 Research Parkway, Suite 300

Orlando, FL 32826-3265

Phone: 407-823-2744

Fax: 407-823-5675

**Home:**

Jeanne Hopple

1518 SE 24<sup>th</sup> Terrace

Ocala, FL 34471-2635

Phone: 352-304-6312 Home

Phone: 352-239-0755 Cell

E-mail: [jhopple@cox.net](mailto:jhopple@cox.net), [Jeanne.hopple@hcahealthcare.com](mailto:Jeanne.hopple@hcahealthcare.com)

I. EDUCATION

| Year      | Degree                                                    | Institution                                                 | Clinical Major                                               | Role Preparation                                                     |
|-----------|-----------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------|
| 1973-1977 | BSN- Nursing                                              | University of Pittsburgh, School of Nursing, Pittsburgh, PA | Undergraduate BSN Nursing program                            | Registered Nurse                                                     |
| 1991-1993 | MSN- Adult Health NP and CV- CNS; Minor Nursing Education | University of South Florida, College of Nursing, Tampa, FL  | Master of Science in Nursing – ARNP, Cardiovascular CNS, and | Advanced Registered Nurse Practitioner- Adult Health; Cardiovascular |

|            |                                                                              |                                                                |                                                                     |                                                                                                            |
|------------|------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
|            |                                                                              |                                                                | Minor in Nursing Education                                          | Clinical Nurse Specialist; Nurse Educator                                                                  |
| 1995-1997  | Seeking Pre-Medicine Degree                                                  | Edison Community College- Ft. Myers, FL                        | Undergraduate and Master's Pre-Medicine courses                     | Course completion to apply for medical school                                                              |
| 2003-2005  | Post-Master's Certificate Family Health Nurse Practitioner                   | University of South Florida, College of Nursing, Tampa, FL     | Post-Master's courses to complete Family Nurse Practitioner Program | Family Health Nurse Practitioner – Primary Care Provider for children and adult health                     |
| 2005- 2011 | Seeking completion of PhD Nursing Science; Expected graduation December 2011 | University of Central Florida, College of Nursing, Orlando, FL | PhD Nursing Science                                                 | Nursing Faculty and Nurse Researcher for University College of Nursing Undergraduate and Graduate programs |

## II. LICENSURE/ CERTIFICATION

FL- ARNP #935922 received 08/1993, expires 4/30/2013. Board-Certification- American Nurses Credentialing Center- Adult NP #0205694-21 received 11/1993, expires 12/01/13, American Nurses Credentialing Center- Acute Care NP #0323271-28, received 12/1998, expires 12/01/13. American Academy of Nurse Practitioners- Board- Certification – Family Nurse Practitioner #F1105261, 11/01/2005, expires 11/01/2015. Current Certification Basic Healthcare Provider (BLS) and Advanced Cardiac Life Support Healthcare Provider (ACLS) Recertified 07/2008, and 11/2010. National Provider



Identifier # 1649219809, Medicare Provider # E3354W, Medicaid Provider #302832100, UPIN #S94385. Florida Blue Cross Blue Shield # Y073M.

### III. EMPLOYMENT

#### *ACADEMIC AND CLINICAL APPOINTMENTS:*

June 2011- Present: Clinical Preceptor, University of South Florida, College of Nursing- Preceptor for Family Practice and Adult NP students

January 2008- Present: Clinical Preceptor and Courtesy Assistant Professor, University of Florida College of Nursing- Preceptor for Family and Adult Nurse Practitioner students, and undergraduate clinical students.

August 2002- January 2004: Nursing faculty- Grant Instructor, Florida Gulf Coast University, College of Health Professions, School of Nursing, 10501 FGCU Boulevard S., Fort Myers, FL. 33965-6565, Federal Grant *Department of Health and Human Services- Promoting Culturally Competent Primary Care Providers*. Instructor for various undergraduate and graduate Primary Care Nurse Practitioner and Nurse Anesthetist nursing courses and undergraduate and graduate clinical instructor.

#### *SIGNIFICANT WORK EXPERIENCE:*

- Family Nurse Practitioner, Family Care Specialists, 2415 SE 17<sup>th</sup> Street, Ocala, FL, 34471 (10/19/09 – present). Phone: 352-732-5365. Fax: 352-690-6607. Fulltime.
- Family Nurse Practitioner, Ocala Family Physicians, PA, 3515 S.E. 17<sup>th</sup> Street, Suite 100, Ocala, FL 34471 (04/30/2007- 5/26/2009- downsized due to low client volume). Phone: 352-732-9922. Fax: 352-732-6934. Fulltime.
- Family & Acute Care Nurse Practitioner and Sexual Assault Nurse Examiner for Marion & Sumter counties. Community Health Services- (Heart of Florida Healthcare- renamed summer 2008), 1025 SW 1<sup>st</sup> Avenue, Ocala, FL 34474, (08/28/2006- 04/20/2007). Phone: 352-732-6599. Fulltime.
- Nurse Practitioner, Premier Medical Group, 2525 Harbor Boulevard, Suites 104 & 114, Port Charlotte, FL 33952 (03/09/2006- 08/16/2006). Phone: 941-629-5757. Part-time, down-sized due to low office volume.

- Family & Acute Care Nurse Practitioner, Punta Gorda Family Medical Clinic, 1107 W. Marion Ave., Punta Gorda, FL 33950 (11/01/2005- 01/22/2006). Phone: 941-637-1076. Downsized due to low clinic volume. Fulltime.
- Acute Care Nurse Practitioner, EM-Care, 18167 U.S. Highway 19N, Suite 285, Clearwater, FL. 33764. Part-time ER NP part-time per-diem for Charlotte Regional Medical Center, Emergency Dept, 809 E. Marion Avenue, Punta Gorda, FL 33950. (05/01/2003- 01/28/2005).
- Acute Care Nurse Practitioner, Coastal Nephrology Associates, Kianoosh Kaveh, M.D., 150 W. McKenzie Street, Punta Gorda, FL 33950. (01/24/2005- 09/30/2005). Phone: 941-505-8720. Fulltime.
- Primary Care and Women's Health NP. Charlotte County Health Department, 6868 San Casa Road, Englewood, FL 34224. Phone 941-681-3750. Fridays, part-time. (05/18/2004- 01/28/2005).
- Acute Care Nurse Practitioner, Punta Gorda Hospitalists, Ricardo Perez, MD., 200 Soursop Street, Punta Gorda, FL 33955. Hospital management of acutely ill adults at 3 Charlotte county hospitals with Ricardo Perez, MD (05/01/2004- 01/24/2005). Part-time.
- Adult & Acute Care Nurse Practitioner, VallaCare Health Services, 517 Tamiami Trail, Punta Gorda, FL 33950. Phone 941-575-1333. (01/12/2004- 04/30/2004). Downsized due to low office and hospital volume. Office and hospital rounds with hospitalist at 3 local hospitals, fulltime.
- Nursing Faculty/ Grant Instructor, Florida Gulf Coast University, College of Health Professions, School of Nursing, undergraduate and graduate nursing and nurse anesthesia programs under federal grant. *Department of Health and Human Services, Promoting Culturally Competent Primary Care Providers*, (08/19/2002- 01/09/2004). Volunteer NP at FGCU Student Health Services for faculty service (10/01/2002- 01/09/2004). Fulltime. Address: Florida Gulf Coast University, College of Health Professions, School of Nursing. 10501 FGCU Boulevard South, Ft. Myers, FL 33965. Phone 239-590-7505.
- Acute Care & Adult Nurse Practitioner, Southwest Florida Heart Group, 8540 College Parkway, Fort Myers, FL 33919 Phone 239-433-8888. (06/30/1997- 08/16/2002). Office and hospital rounds in 2 local hospitals. Fulltime.
- Acute Care Nurse Practitioner Cardiothoracic Surgery Services, Charlotte Regional Medical Center, 809 E. Marion Avenue, Punta Gorda, FL 33950 (01/05/1996- 06/27/1997). Phone 941-637-3131. Office and limited hospital rounds in 2 local hospitals. Fulltime.
- Adult Nurse Practitioner, Inter-Medic Health Center, 2885 Tamiami Trail, Port Charlotte, FL, 33952 (Clinic destroyed by Hurricane Charley 2004). (11/20/1994- 11/22/1995). Office, nursing home and hospital rounds in 2 local hospitals. Fulltime.
- Adult Nurse Practitioner, Cardiology Associates, 4130 Tamiami Trail, Port Charlotte, FL 33952. Phone 941-629-4500. (09/04/1993- 11/19/1994). Office and hospital rounds in 3 local hospitals. Fulltime.

- Critical Care Staff RN (Part-time – Graduate School), Health Park Medical Center, Telemetry Units, 9981 S. Health Park Drive, Fort Myers, FL 33908. Phone 239-433-7799. (07/01/1991- 09/01/1993) Left after graduating as an ARNP.
- Medical-Surgical Education Specialist, Lee Memorial Hospital Education Services, 2776 Cleveland Avenue, Fort Myers, FL 33901. Phone 239-332-1111. (03/01/1989- 07/01/1991).
- Cardiac Patient Educator (Staff Development), Southwest Florida Regional Medical Center, 2727 Winkler Avenue, Fort Myers, FL, 33901. Phone 239-939-1147. (12/20/1987- 03/01/1989).
- Clinical Educator, Nurse Clinician IV- Angioplasty MPCU, Southwest Florida Regional Medical Center, 2727 Winkler Avenue, Fort Myers, FL, 33901. Phone 239-939-1147. (07/01/1987- 12/17/1987).
- Staff Registered Nurse- MICU, CCU, MPCU, Southwest Florida Regional Medical Center, 2727 Winkler Avenue, Fort Myers, FL, 33901. Phone 239-939-1147. (11/10/1986- 07/01/1987)
- Maternity Leave (04/01/1986- 11/07/1986)
- Cardiac Rehabilitation Nurse Specialist, Cape Coral Cardiac Rehabilitation Center, Cape Coral Hospital, 708 Del Prado Boulevard, Cape Coral, FL 33990. Phone 239-574-2323. (11/01/1984-04/01/1986).
- Staff Registered Nurse- MICU, Lee Memorial Hospital, 2776 Cleveland Avenue, Fort Myers, FL 33901. Phone 239-332-1111. (01/01/1980-11/01/1984)
- Assistant Head Nurse- Cox 1- Medical-Surgical, Lee Memorial Hospital, 2776 Cleveland Avenue, Fort Myers, FL 33901. Phone 239-332-1111. (01/01/1979-01/01/1980).
- Staff Registered Nurse- Neurology, ENT, Lee Memorial Hospital, 2776 Cleveland Avenue, Fort Myers, FL, 33901. Phone 239-332-1111. (04/20/1977-01/01/1979).

#### IV. PUBLICATIONS

*REFEREED NATIONAL/ INTERNATIONAL JOURNALS:* Published Abstract & Poster Presentation- Hopple, J. (2008). Resilience in Older Women: Evolutionary Concept Analysis. *Southern Online Journal of Nursing Research*, February 2008, and published conference proceedings Southern Nursing Research Society SNRS 22<sup>nd</sup> Annual Research Conference, *Health Disparities Evidence into Action 2008*, Birmingham. Alabama.

*NON-REFEREED NATIONAL/ INTERNATIONAL JOURNALS:* NA

*NON-REFEREED REGIONAL/STATE:* Hopple, J. (1988). Straight From the Heart- Insights on Cardiac Patient Teaching. *Florida Society of Hospital Educators and Trainers (FSHET) Newsletter*, Vol. II, February.

*GUEST EDITOR, NATIONAL/INTERNATIONAL JOURNALS:* NA

*TEXTBOOKS:* NA

*BOOK CHAPTERS:* NA

*ABSTRACTS:* See above.

V. RESEARCH AND GRANTS

Proposed dissertation research in partial fulfillment of degree of Doctor of Philosophy in Nursing from University of Central Florida, College of Nursing. Qualitative narrative inquiry research study, “Adherence Practices of Caucasian Women with Hypertension Residing in Rural Florida: an Exploratory Study” In progress, no active grants.

VI. PRESENTATIONS

*REFEREED NATIONAL/ INTERNATIONAL:* NA

*INVITED NATIONAL/ INTERNATIONAL PRESENTATIONS:*

February 21, 2008 –Invited poster session of abstract, Hopple, J. (2008). Resilience in Older Women: Evolutionary Concept Analysis. Presented at Southern

Nursing Research Society SNRS 22<sup>nd</sup> Annual Research Conference, *Health Disparities Evidence into Action 2008*, Birmingham, Alabama.

*REFEREED REGIONAL/ STATE: NA*

*INVITED REGIONAL/ STATE/ LOCAL PAPERS:*

-May 17, 2011- Invited lecture on “Menopause: Understanding Women’s Bodies” to Senior Wellness Center, HCA Healthcare, Ocala, FL.

-April 7, 2009 - Invited poster session of abstract - Hopple, J. (2009). Older Women and the Internet. Presented at Sigma Theta Tau International Honor Society of Nursing Research Day 2009. Promoting Nursing Knowledge through Research, Evidence & Innovation. 17<sup>th</sup> Annual Research Day, Sigma Theta Tau International: Theta Epsilon Chapter- Nursing Research Linking Practice to Patient Care Outcomes.

-April 1, 2008 – Invited poster session of abstract - awarded first place and \$100. Hopple, J. (2008). Resilience in Older Women: Evolutionary Concept Analysis. Presented at Sigma Theta Tau International Honor Society of Nursing Research Day 2008. Fostering Research and Innovation for Nursing 16<sup>th</sup> Annual Research Day, Sigma Theta Tau International: Theta Epsilon Chapter- Promoting Nursing Knowledge through Research, Evidence & Knowledge. University of Central Florida, Winter Park, Florida.

VII. AWARDS

May 2008- Awarded Courtesy Assistant Professor status as preceptor for Adult and Family NP students with the University of Florida College of Nursing, Gainesville, FL.

Member *Who’s Who in American Professionals?* 2001.

Member Florida Nurses Association –nominated to Clinical Excellence Task Force 1996-1999 to develop Clinical Excellence program.

*Member Who's Who in American Nursing? 1990-1993.*

VIII. PROFESSIONAL ACTIVITIES & COMMUNITY SERVICES

*PROFESSIONAL ORGANIZATIONS:*

Delta Epsilon Iota- UCF Chapter- Invited member of national organization of graduate students with GPA 3.5 or greater. Member since invited November 2005.

Organization of Doctoral Nursing Students- University of Central Florida College of Nursing, Charter member and treasurer from 2006-2008.

Florida Nurses Association/ American Nurses Association- member 30 years. Current member District 3- Marion County.

Sigma Theta Tau International Honor Society of Nursing- member 37 years. Current member of Theta Epsilon Chapter University of Central Florida and Tau Zeta Chapter- Florida Gulf Coast University.

Southern Nursing Research Society- Current doctoral student member and member of Research Interest Groups- Qualitative Nursing Research, Community Health Research, Clinical Nursing Research, and Health Outcomes Nursing Research. Member since 2007.

American Heart Association Scientific Councils- Cardiovascular Nursing, and Evidence-based Hypertension Research- Professional Member.

Preventive Cardiovascular Nurses Association- Professional Member.

American Academy of Nurse Practitioners- Member since 2002.

*JOURNAL EDITOR & EDITORIAL REVIEW BOARDS: NA*

*COMMUNITY SERVICE:*

Volunteer American Heart Association worker and member Speakers bureau.  
Volunteer with First Baptist Church, Ocala, FL Women's Group.

*CONSULTATION: NA*

*UNIVERSITY SERVICE:*

Organization of Doctoral Nursing Students, University of Central Florida-  
College of Nursing 2006-2008. Served as Treasurer and helped organize group as a  
charter member-

*DISSERTATION/ THESIS/ RESEARCH PROJECT ADVISING (UCF): NA*

*DISSERTATION/ THESIS/ RESEARCH PROJECT ADVISING (Other  
Institutions): NA*

## REFERENCES

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